Minnesota Medicine

Journal of the Minnesota State Medical Association, Southern Minnesota Medical Association, Northern Minnesota Medical Association, Minnesota Academy of Medicine and Minneapolis Surgical Society

Volume 28 October, 1945 No. 10

ABUSE OF PROLONGED REST IN THE AGED

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THERE are over 9,000,000 persons sixty-five years of age and over in these United States. This is an increase of 36.5 per cent among the elderly as contrasted with a 7.2 increase in the total population in the last ten years. This rapid increase of older persons in the population is due to life saving and disease prevention in the earlier years of their lives. The man of fifty to sixty-five years has no better expectancy than did his grandfather. Dublin[4] states that while the rate of invalidism for all the population is eleven per thousand for all ages, this increased to 53.5 per thousand at ages sixty-five to seventy-five years. The fact that these people lived to an advanced age is some proof that they had better than average natural resistance to infections and to early degenerative conditions.

The hospital and medical care of this large group with a high rate of invalidism brings up a problem of increasing importance. At present a large number of patients in our general hospitals are sixty-five years of age and over. Some of them enter in terminal conditions and will never leave the hospital alive. Others who are not so ill run the risk of becoming confirmed invalids by too prolonged stay in bed, whether for medical or surgical care. Soon they lack the will to make an effort to get up and around; they become hopeless in outlook and, in time, mentally deficient. Without some incentive to get back soon to work or home these patients deteriorate very rapidly. All these older patients do not enter a hospital because of disease conditions peculiar to their age. A number of them will enter with conditions common to early life and old age, medical or surgical. Of such are the cases of acute appendicitis, acute cholecystitis, strangulated hernia, lobar pneumonia, and others. Accidents are common among older patients. Urinary infections occur often, due in men frequently to obstructive uropathy and in woman often to neglected cystocele due to old perineal lacerations.

While cancer is not now considered a disease peculiar to the very old it will constitute one of the common causes of entry of these patients into hospitals for care. The patient who is cachectic because of too long illness due to cancer will require longer hospitalization and because of the nature of the surgery may require long postoperative care. The same rule of less bed rest will apply, however, to these cases as usually they will do better if they are gotten out of bed early, whether or not the case is one where a cure is expected or where the operation is a palliative one.

The problem of caring for these older patients is an increasing burden on our rural hospitals. With such increase in numbers of older patients in local and metropolitan hospitals a renewed study of the subject may be in order. This is true for both surgical and medical cases. Such a review would perhaps clarify several questions on such care: (1) for the better care of the patient, and (2) the question of lessening the hospital burden.

In the two Crookston general hospitals 4,045 patients were admitted during 1944, with the average stay for all patients of 9.83 days. During the same period, 410 patients aged sixty-five

years and over were admitted, with an average hospital stay of nineteen days. Thus, these older patients required approximately twice as much hospital care as would an equal number of younger patients. It is understood that early rising does not always mean leaving the hospital earlier, but in the great majority of cases such early rising will shorten the period of convalescence and cut down the period of hospitalization. Cardiovascular renal disease accounted for 102 of these patients; cancer for thirty-three cases and respiratory conditions for thirty-five. Some of these cases overlap because of presence of terminal respiratory conditions. There were sixty-six deaths. These followed the usual pattern for this age group, and some of these deaths were from postoperative cardiovascular complications; cardiovascular conditions accounted for thirty-one deaths: cancer, seventeen; pneumonia, five; uremia, four; ulcers of the stomach, two; pulmonary thrombosis, acute appendicitis, cholecystitis, mesenteric thrombosis, diabetes and splenic anemia, each one; there was one death from accident. Some of these latter cases may come in as emergencies and will not allow for much pre-operative preparation. Other cases may be classed as elective as to time of operation for surgical conditions which will allow for better preparation.

With such aged patients entering our hospitals in increasing numbers it behooves the profession to reconsider the care of these people. There is a need for revision of our previous ideas of what constitutes proper care for all surgical and medical cases, and particularly, postoperative care. Respiratory and circulatory complications are rather too common during and following any bed rest. Many writers today stress the bad effects of prolonged bed rest. A review of such reports will disclose the fact that all are rather definitely in favor of shortening the period of bed rest. This is especially true in the case of older persons: the young seem to withstand such care better than the aged.

The custom of keeping patients in bed for long periods is a sort of tradition going back in the profession for forty years or more. With poor sutures and perhaps not so meticulous care in surgery, there was a reason for the fear on the part of both patient and surgeon that the surgical wound might break down before firm healing. The patient was rather tightly strapped, motion was limited, and he might be kept in bed three weeks following such a simple operation as hernia. Early rising means that the patient is up the first or second postoperative day. The bed patient will have a lag period following this as wounds will not be as strong as on the first or second days. He will be up only for a short period the first time but this period will be increased daily and more movement allowed.

Many of these patients enter with definite handicaps due to conditions peculiar to their age group. A considerable number will suffer from nutritional deficiencies usually due to ignorance or too much "scientific" dieting urged by food faddists or insisted on by the patient for various reasons. Tuohy[11] has done much to rationalize the feeding of such old people and his advice may be followed in the hospital when the patient enters the physician's care. He has emphasized the need of an adequate and varied diet for these old people with enough protein to replace losses and enough other foods to supply energy and reserve. Such patients who have a liberal diet as part of their pre-operative care for elective surgery will be better surgical risks than will those without such care. In emergency cases there will not be time to improve a bad nutritional background, and so recourse will have to be had to plasma, blood transfusions and intravenous glucose with sufficient saline, before and after operation.

Stieglitz[9] states the most significant disorders in the aged are cardiovascular renal diseases, arthritis, diabetes and cancer. The cardiovascular condition may be very evident or it may become manifest as a postoperative complication. A distinct tendency to such complications exists in the aged and may manifest itself as coronary disease, thrombi, or edema of the lungs. It is felt that the great majority, perhaps 60 per cent or more, of patients over sixty-five years of age have some coronary disease. In a study of 100 cases by Freedberg and Lewis[5] of such old patients, sixty-three of them had significant coronary artery disease. All older patients should be handled as if they had some degree of coronary sclerosis. Every effort must be made to avoid shock which may predispose to postoperative myocardial infarction.

Postoperative complications will be more common in this group than for similar operations in younger patients. Mortality will be higher and there is always the possibility of prolonged mor-

bidity. Wilcox and Clagett[13] have reviewed this subject very well with a large number of cases from which to draw conclusions. They list 1204 patients over sixty-five years of age. A very great number of this group had some postoperative complication, such as thrombophlebitis, embolism, atelectasis or pneumonia. A significant number had renal or cerebral complications. Their mortality, 8 per cent, was low for such a group which included usual surgical conditions and operable carcinoma. Wangensteen[12] feels that surgery is relatively safe in elderly patients who are properly prepared, given pre-operatively a high protein, high carbohydrate and low-fat diet. He advocates a rigid postoperative regime and early movement and rising.

Ries[8] should be given much credit for his courage in advocating a change in the after-care of patients. This was in 1899 and his was a list of general surgical cases including all ages. He allowed most of his patients up the second day. The practice became popular in Europe and its use was extended. It is said that it was nowhere discontinued because of ill effects. For some reason, this practice lapsed during the late 1920's to be revived during the last ten years.

Older patients are inclined to be lethargic and this condition will be worse after too much narcotic medication. Once the older patient is up he will feel that there is some hope that he is going to get well and then will co-operate better. There are several advantages in early rising which many surgeons appreciate more as the plan is tried. Perhaps the urologists should be given more credit for getting their patients up early after operation. Prostatectomy was a serious operation and it was found that such patients had to be out of bed early or they would have a lessened chance for recovery. Other surgeons noted that older patients who disregarded orders and had gotten up the first night after operation convalesced rapidly and safely, with fewer complications. Wound rupture early or late was less frequent and accumulation of wound serum and wound infections were markedly less as were pulmonary complications.

No operation can be considered safe in the old-age patient; the mortality will be higher than in the younger age groups. The risk must be considered, whether the operation or the disease carries the greater risk. The mortality varies with the type of operation and experience of the operator. Dock[3] has made the statement that bed rest claims more lives than all other therapeutic agents added together. He emphasizes the fact that "the hazards of cardio-circulatory pulmonary complications are greatest in patients well enough to be propped up in bed, often with legs flexed over a pillow or a bend in the mattress." He adds "that the danger is far greater in obese patients than in thin ones, in the elderly than in the young" and "that such complications have become one of the most frequent causes of death following operations, or during the medical care of chronic and acute diseases of the senescent and senile." He states that among elderly patients after days or weeks of bed rest, thromboses were demonstrated in one-fourth to one-half of a large series studied. It has been found that the onset of phlebothrombosis may be in the skin of the back of the leg or foot, extending later to the deeper veins; venous stasis completes the picture. Hypostatic broncho-pneumonia is perhaps the next most common complication of surgery of older patients; its onset is insidious and favored by bed rest.

Bowers[2] of New York City favors the early rising of his elderly patients, and early activity. He has found that this reduces complications following operation for carcinoma of the stomach. Fred W. Bailey[1], St. Louis, urges the need to "shorten bed rest in the case of old patients and to return them to their normal environment at the earliest possible moment even at the price of permanent recovery. Controlled activity will favor and hasten early healing in the aged."

The time-honored treatment for heart disease has been rest in connection with the various medicines and this within limits is of great benefit to the cardiac patient. Long continued bed rest may be harmful in some of these cases and such ambulatory patients will often develop pulmonary râles and hydrothorax when kept in bed for a long time. Levine[10] states that in such cases peripheral edema may disappear but that the patient may have several liters of latent edema. Fluid has increased in the lungs where it is more dangerous; continuing bed rest in such patients may tend to increase dyspnea and pulmonary edema. He advises that such patients even with serious pulmonary edema should be allowed to sit up in a chair to allow some gravitation of fluid away from the chest.

Harrison[7] mentions the great value of bed rest

but feels that the subject of prolonged rest needs revision. This applies to rest treatment for cardiac disease, including coronary disease. He feels that a patient would have a more normal psychological life if he were up and about. Cardiacs kept in bed show an added incidence of pulmonary infarcts, hypostatic pneumonia and uremia. A series of studies in Vanderbilt University Hospital and later in the North Carolina Baptist Hospital seems to show that shorter bed rest for congestive failure cases had no higher mortality and the patients were happier.

Many older patients subject to senile bronchitis will develop an exacerbation of their condition which may rapidly become fatal with bed rest. This condition may appear after operations, the patient rapidly becoming toxic and dyspneic with lungs becoming edematous. Getting such patients out of bed will often change the course of their illness and recovery may be rapid.

Thewlis[6] believes that one of the best methods in the treatment of the aged is to keep such patients out of bed and that the ordering or urging of such patients out of bed is often a psychic stimulant; that such a patient will brighten up with marked physical improvement. He urges the same postoperative care for the aged surgical case as for the younger patients, so far as early movement in bed and early rising. Such patients, he believes, will do better no matter what type of operation, if out of bed the second or third day; elimination will be better and urinary retention may disappear.

Because of the many physical handicaps of these old-age patients no rule or procedure will be applicable to all cases and the physician will do well to be not too dogmatic in the handling of such cases. In a great majority of patients who are old and who need medical or surgical care, prolonged rest will be a definite hazard both from the point of view of their physical well being and also because of the very marked psychic changes which may take place with the result that they may be greatly handicapped. While prolonged rest is an abused therapeutic procedure, too early rising or too little rest may be dangerous in some old patients. It would seem that the profession should strive to arrive at a correct balance between rest and activity in therapy.

Contraindications are not many and are more or less self evident. The method cannot be applied to patients more or less bed ridden before operation and each case must be evaluated before early rising is attempted. Shock, cardiac failure and pneumonitis would mean bed rest for the patient. Drainage of an abdominal wound may be a contraindication. Peritonitis or abdominal hemorrhage would make the method unsafe as would complications of the wound including contamination, infection, and dehiscence. Thrombi or emboli either present or feared and marked anemia or debilitation due to other causes would delay rising.

Conclusions: Prolonged bed rest may add to the risk in any illness of the aged who are already handicapped and many cardiovascular patients do better if out of bed early. Wound healing is more rapid with early rising after operation and wounds have fewer early or late ruptures; motion favors healing. There will be fewer pulmonary complications, and vascular accidents are markedly reduced.

In old people the use of urinal and bedpan is dreaded and early rising permits them to go to the toilet. Distention is lessened and urinary complications less frequent. The old patient is very happy to be up and feels that there is hope for his ultimate recovery. Early rising should mean early walking. Patients do not dread hospitalization if they know that they will not be kept in bed long.

The principle of little bed rest for the old patient should be adhered to in the patient who comes in for pre-operative conditioning. Such patient should be up and around as much as possible, have a proper diet and be out of doors if possible, even though it be by wheel chair.

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THROMBOSIS AND EMBOLISM OF THE ABDOMINAL AORTA

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SINCE the first description of thrombosis of the abdominal aorta by Graham in 1814, the clinical-pathological picture of this dramatic episode in medicine has been more widely recognized.[1] Although the number of reported cases has reached 180 in the past 130 years, it remains a relatively rare occurrence. Because of the grave prognosis and the value of early therapeutic intervention, it requires prompt recognition. A case illustrating thrombosis of the abdominal aorta is reported.

Case Report

A fifty-year-old man was admitted to the hospital in a state of congestive heart failure. His past history was insignificant. He had had no previous hospitalization. His present illness began one year ago with dyspnea. He was given digitalis for a long period of time. He worked until four months before admission, when he fell and remained unconscious for four hours. He lost full control of his left hand following this incident. He remained in bed because of dyspnea and weakness.

At the time of admission, he complained of shortness of breath, pain and soreness over the upper right quadrant, fatigue and rheumatic pains in the right knee. Pertinent physical findings were: dyspnea at rest, slight cyanosis of lips, fine râles over both bases posteriorly, enlarged heart, weak shallow pulse, blood pressure of 90/50, and liver enlargement of three fingers breadth on the right. The extremities were cool and mottled. There was loss of motion of the fingers of the left hand. No murmurs were heard. Laboratory procedures indicated: heart occupied 57 per cent of the transverse diameter of the chest, erythrocytes 5,050,000, hemoglobin 100 per cent, leukocytes 8,400, sedimentation index 14 (Cutler), 2 plus albuminuria without cells or casts in urine, negative Wassermann, N.P.N. 32, blood sugar 100, and icteric index 10.7. The diagnosis of arteriosclerotic heart disease with myocardial insufficiency and peripheral vascular failure was made. He was given digitalis 3 grs. daily, codeine, aminophyllin, dry cradle heat and morphine. Four days after admission his diastolic pressure was unobtainable and the systolic fluctuated between 80 and 105. A rough systolic murmur was heard later over the entire precordium. The distal portion of the toes was red. The patient experienced moderately sharp pains in the left calf. Subsequently, the left leg swelled and measured 3 cm. more than the right. The leukocytes were 13,000 with 79 per cent neutrophils. The Takata-Ara was slightly positive. His symptoms were restlessness and insomnia. Embolization and subacute bacterial endocarditis were considered, although blood cultures taken then proved to be sterile later.

On the tenth hospital day his temperature rose, he complained of backache, chest pains and constipation. He became confused, had a weak pulse, and slight hemoptysis. He complained of pain in his lower extremities. The skin became cold, the pulse imperceptible and the blood pressure unobtainable. The following day he appeared somewhat brighter. His left leg, although edematous, became red. He complained of chest pains. His pulse was shallow, he became more confused, coughed considerably, appeared cold, clammy and semicomatose. He expired on the fourteenth hospital day.

Autopsy was performed shortly after death. Pertinent features were: bilateral one plus pitting edema from knees to ankles, lividity of the lower extremities, atelectasis of upper portion of the right lung with soft gelatinous exudate over the entire lung, bilateral consolidation of the lower lobes, infarction two inches wide in posterior right lobe, although pulmonary thrombosis was not demonstrable. Petechiae were seen in the epicardium. There was no evidence of valvular damage or coronary sclerosis. No myocardial infarction was seen. The right auricle was dilated, the heart weighed 680 grams. The cirrhotic liver weighed 1,600 grams. The spleen and kidneys showed passive congestion. In the abdominal aorta there was an extensive, organized and adherent thrombosis which extended from the level of the diaphragm to the bifurcation and down into the left iliac. The thrombosis was 20.5 cm. in length of which 3 cm. extended into the left iliac artery. The width was 21 mm. at its greatest diameter. There were atheromatous plaques present throughout the aorta with no calcification noted on gross examination. There was another small thrombus about the size of a kernel of corn on the lateral aspect of the aorta at the level of the bifurcation, but this appeared to be independent of the massive thrombosis. The thrombus incompletely occluded the abdominal aorta.

Discussion

Despite the number of cases reported, thrombosis and embolism occur infrequently. A survey of consecutive postmortems made in the city hospitals of Cleveland, Chicago, Brooklyn, and New York indicates that thrombosis and embolism of the abdominal aorta occurs approximately once in 1,000 autopsies.[1] Embolism is noted more frequently in females than in males, but thrombosis is more common in men. Although found in in-

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fants, they are most frequent in the fourth and fifth decades. Embolisms cause the greater number of occlusions. Embolisms are caused more frequently by auricular fibrillation and valvular heart disease, particularly in verrucous valvulitis, where auricular stasis accompanies mital stenosis. Mural thrombi in dilated left auricles and ventricles during chronic failure less commonly cause embolism.[2] Mural thrombi have been found in one-third of all cases in which death followed heart failure, and have been found in two-thirds of hearts where myocardial infarction was present.[2] Rarely thrombi in the walls of the aorta, particularly the thoracic, may be responsible for emboli to distant points. Even the ball valve thrombus of the auricle may be a starting point for an embolus to the aorta.

Fig. 1. Atheromatous aorta with thrombus extending from 17.5 cm. above the bifurcation to 3 cm. down the left iliac.

Abdominal aorta thrombosis often follows arterial embolism as a secondary manifestation, but it may occur independently of embolic phenomena.[3] When thrombosis occurs independently of embolism, atheromatous degeneration and ulceration form the nidus for thrombus formation. In the largest series of cases reported, 36 per cent were of this category.[3] It has been found that thrombosis occurs predominantly in males fifty to eighty years of age. The average age in that series was sixty-two. These cases, like the one described above, are of the thrombo-arteriosclerotic type. Other etiological factors, however rare, may cause thromboses. These are abdominal aneurysm with mural thrombosis, or infections of influenza, diphtheria, streptococcus, syphilis and pneumococcus. Other precipitating factors are hemoconcentration of the blood and stagnation which may follow surgical or orthopedic maneuvres. In this respect, it is remembered that the velocity of a fluid in a tube is inversely proportional to the viscosity and directly proportional to the driving pressure to which it is subjected. Other rare precipitating factors are polycythemia, myeloid leukemia and extrinsic pressure from outside tumors.[3]

Clinical Manifestations.—The principal clinical manifestations are pain, fever, weakness, color changes, loss of reflexes, loss of sensations and of pulsation. Patients with subacute bacterial endocarditis, auricular fibrillation, congestive heart disease with mural thrombi, arteriosclerosis of the aorta, abdominal aneurysm and such infections which may cause areas of degeneration in the aorta thus acting as a focus for the formation of a thrombus are candidates for embolism and thrombosis of the abdominal aorta. The typical and more frequent symptoms are severe, sudden pains in the extremities, or radiation of abdominal pain into the lower back, groin or girdle area. Pain is the classical symptom. Pain varies in intensity and duration. It may be described as excruciating, stabbing, dull or aching. If the pain has a gradual onset, it indicates a gradually narrowing process. If pain is severe and constant, gangrene may accompany the clinical picture, depending upon the completeness of the occlusion and the extent of collateral circulation. Embolism causes sudden pain. If pain is gradual, slow and somewhat of a constant variety, thrombosis may be suspected.

Variations in coolness of the extremities are observed. If the obstruction is fairly complete, paresthesias, tingling, numbness follow. Color changes are described as black, cyanotic, blue,

white, pale, blanched or mottled. Often absence of pulsation in smaller arteries are to be found. In these cases the oscillometric index is zero. Associated with the temperature and color changes are disturbances of sensation which may accompany most cases of abdominal aorta occlusion.[3] Reflexes may be decreased or absent. Findings of changes more marked on one leg than the other indicate the presence of a saddle or rider's embolus. Weakness of extremities, loss of voluntary control of movements of the toes, and paraplegia occur in many cases. Loss of reflexes of lower extremities is another indicative finding. Herrmann[2] states that it is impossible to differentiate between embolism and thrombosis at the aortic bifurcation. However, gradual progression of symptoms occur more frequently with thrombosis, while embolic lesions cause sudden onset of agonizing pain, usually referred to both lower extremities. Gangrene, which might be expected in many cases, is not present except on rare occasions. This may be explained by the fact that the lesion, if completely occluding the major vessel—as it must in order to cause gangrene—causes circulatory failure and death.

When embolic occlusion of an artery is incomplete, diagnosis is more difficult. Similarly, since thrombosis occurs in a steady progressive manner, other phenomena must be eliminated before the diagnosis can be established conclusively. The differential diagnosis must exclude widespread venous thrombosis of both lower extremities, in which case pulsations are present, the limbs warm and edematous, the veins tender and sensation unchanged. Also to be excluded are: (1) ischemic necrosis seen in patients with advanced arteriosclerosis, (2) peripheral vascular disease, such as thrombo-arterioclerosis of the lower extremities, (3) Buerger's disease; (4) coarctation of the aorta, and (5) scleroderma. Failure in diagnosis may be due to frequent absence of classical symptoms of pain, temperature and color changes, loss of sensation, skin sensitivity reduction, weakness of extremities and loss of reflexes. This may be due to the formation of an occluding thrombosis of the aorta immediately before death. Failure may also be due to a lowered threshold of pain and lack of sufficient time for visible changes to occur. It must be remembered that an incompletely occluding embolus gives rise to secondary aortic thrombosis.[2]

Treatment.—If treatment is to be of value, diagnosis must be made early. Only in embolism is surgery indicated. Surgical interference depends upon early diagnosis and localization of the embolus. Prompt embolectomy may be accomplished most successfully only within the first six hours, must be performed within twenty-four hours after the accident.[2] There have been several reported cases in which surgical intervention has resulted in the saving of a life. However, since the advent of anticoagulants, treatment is predominantly medical. Heparin must be used promptly, before the secondary thrombosis takes place, if embolism is present, and as soon as possible after an embolus has lodged to prevent development of thrombosis. Dicumarol can be employed as an adjunct anticoagulant. It is of prophylactic value in cases of rheumatic heart disease with auricular fibrillation, where embolization at the aortic bifurcation is anticipated. Recovery following the use of anticoagulants has been reported.[3] Because thrombosis follows embolization, it is imperative that heparin and dicumarol be employed promptly. When one considers that these anticoagulants prevent further enlargement of the thrombus and embolus, it is important to begin treatment as promptly as the diagnosis is established. Prevention of extension of an occluding blood clot may make for a spontaneous recovery.[2,3] Watchful waiting should be employed only when there are signs of a progressively improving circulation. Demarcating gangrene may be treated subsequently by amputation.

It is imperative, because of the high mortality rate, that all available medical means be employed. In addition to anticoagulants, therapy should include large doses of vasodilators such as papavarine (which is preferably given intravenously), aminophyllin, morphine and whisky. Digitalis and other opiates have been used routinely. The oscillation bed, a form of passive vascular exercise, has been introduced by L. G. Herrmann successfully.[2,3] Other treatments have included dry heat over the involved area, increase in fluid content (since an excessive concentration of plasma protein favors the inception of a thrombus), Buerger's exercises, partially occlusive bandages, paravertebral sympathetic block to relieve vascular spasms distal to the arterial obstruction and lumbar sympathectomy. Medical care must include treatment of the cardiac disease which is the etiological factor in many cases

of thrombosis and embolism of the abdominal aorta.

Prognosis.—The prognosis is always grave. Of the 180 cases recorded to date, over 90% were fatal.[1] Death occurs several hours to several months after onset of symptoms. Those recovering develop either collateral circulation without surgical intervention or dislodgment of the embolus into one of the smaller arteries, with resulting amputation of a part of the extremity.[1] In the largest group of occlusions of the abdominal aorta, the average duration of life was ten days.[3]

Summary

1. A review of the subject of thrombosis and embolism of the abdominal aorta indicates that this is a rare occurrence. Nevertheless, the diagnostic manifestations form a definite clinical pattern which must be recognized early since prompt medical and surgical intervention affords the only possible means of saving a life.

2. The etiological criteria as well as the differential diagnoses must be borne in mind in the prophylactic approach to this problem.

3. A case of extensive thrombosis of the abdominal aorta is presented. The atherosclerotic plaques on the aorta formed a nidus for the development of the thrombosis. Survey of the literature indicates that the thrombus was one of the largest ever reported.

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CONGENITAL ATRESIA OF THE BILIARY TRACT

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Since nearly one-fourth of the infants with congenital agenesis, atresia or stenosis of the biliary tract are subject to surgical correction of their condition[17], it is essential that physicians caring for newborn infants recognize and properly care for the victims of this otherwise fatal malady.

Case Report

This full-term, white, female infant weighed 8 pounds 8 ounces or 3,865 grams. She was delivered by midforceps on March 30, 1945, and died on April 7, 1945. There was no jaundice or other observed abnormality at the time of birth. Jaundice developed after two days and rapidly became very intense. The skin became a remarkable greenish-yellow color, not at all like the color of icterus neonatorium. The stools were yellowish-white in color and loose. She took feedings well and cried easily and frequently. Her skin was very sensitive to touch. On April 5, 1945, it was noticed that there was subcutaneous edema about the face, abdomen and legs. This edema gradually became more marked so that the skin became tense and firm over the abdomen, upper legs and back. The liver and spleen were not significantly enlarged to palpation. The abdomen became distended and tense. During the last twenty-four hours the child vomited all fluids by mouth and she became very weak. This weakness was progressive until death, one week after birth.

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Laboratory studies revealed much bile in the urine but only a trace of urine urobilinogen. The icterus index reached 160 and the quantitative van den Bergh 17 mgs. per cent. A qualitative van den Bergh was of the immediate direct type. Blood serum proteins were: albumin 2.18 grams per 100 c.c. and globulin 0.96 grams per 100 c.c. There were 6 erythroblasts per 100 white blood cells at the time of birth and this fell to 2 per 100 white blood cells at the end of one week. Both the mother and baby were Rh positive. The red blood cell count was 5,010,000 and the hemoglobin 15.0 grams. The white blood cell count gradually rose from 3,900 to 12,300. The differential count was essentially normal. Blood urea nitrogen was 54.8 mgs. per cent and creatinine 1.8 mgs. per cent. Stools were not examined for bile or urobilinogen. A flat film of the chest and abdomen revealed no significant abnormalities. The child was given a 60 c.c. blood transfusion and penicillin. She was never considered ready for exploratory laparotomy; however, the diagnosis of atresia of biliary ducts was considered certain.

Autopsy.—The essential findings at the postmortem examination were those of an atresia or agenesis of the extrahepatic bile ducts and gall bladder, a severe cirrhosis of the liver with hyperbilirubinemia, hypoproteinemia with general anasarca and a mild sterile peritonitis (bile). The liver weighed 200 grams, twice its normal weight, and was a deep green throughout. Its outer and cut surfaces (Fig. 1) had a fine pebbly appearance of cirrhosis with a greater amount of interlobular fibrosis apparent near the hilum. A careful

dissection led to the findings of an apparent complete absence of the right hepatic and common ducts while the left hepatic duct was represented by a delicate fibrous cord in which a few epithelial cells were found, histologically. The rudimentary gall bladder had no lumen and the cystic duct was a delicate fibrous cord which disappeared in the adjacent loose connective tissue. There were no large bile ducts in the hilar area of the liver. The papilla of Vater was present and had an atristic common duct which could be traced 1 cm. The duct of Wirsung was found to empty into the ampulla of the papilla apparently without being obstructed.

Fig. 1. Obvious surface scarring (cirrhosis) of the liver.

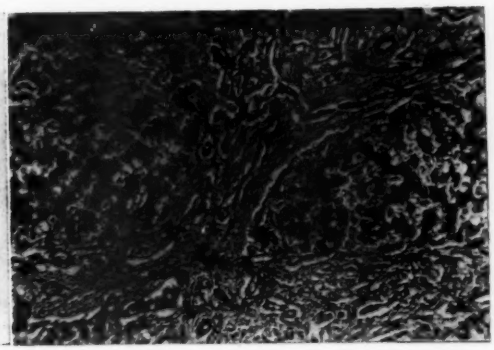

Fig. 2. Extensive scarring in portal areas with bile duct proliferation and stasis of inspissated bile in ducts.

Histologically, extensive deposits of inspissated bile was demonstrated in bile ducts, canaliculi and cytoplasm of liver cells in all sections (Fig. 2). There was rather severe cellular fibrosis throughout the portal areas forming a network isolating many liver lobules. There was practically no inflammatory cell reaction. Mild toxic changes were evident in liver cells. There was a chronic passive congestion of moderate grade in the spleen. Bile casts were found in kidney tubules.

Etiology

Of the variety of theories concerning the etiology of atresias of the biliary tract, those dealing with defects in embryologic development are by far the most logical and generally discussed. The liver is the first gland of the digestive tract to appear. It is in the embryo of 3 mm. length.[1] There is a longitudinal evagination from the ectoderm of the gut in the duodenal area. The cephalic portion of evagination is solid and designed to become the liver or pars hepatica. The caudal portion, the pars cystica is hollow, its cavity continuous with the lumen of the gut. From this part, the gall bladder and extrahepatic ducts arise. Beginning at both ends the evagination constricts itself from the gut so that in an 8 mm. embryo it is only connected with the intestine through a narrow cord of cells which are later to become the extrahepatic biliary ducts. Most authors believe that the extrahepatic ducts lose their patency through epithelial proliferation to become solid cords only to later redevelop their lumina. It is not difficult to imagine a cessation of embryologic development at any point in the process similar to the atresias and stenoses which have been theorized in the closely related intestinal tract and elsewhere. As to the reason behind this cessation of normal development and maturation, it is explained that there are two major harmonious factors ("double assurance") which are known to insure complete development of a part of the body. One of the major factors is an intrinsic predisposition within the primitive cells to undergo specialization and is sometimes referred to as cell-competence and the other major factor is an induction stimulus of a chemical nature elaborated by certain previously specialized cells ("organizers"). A good example of an "organizer" is the effect of the outgrowing optic vesicle upon transplanted ectodermal cells from any part of the body surface, which transplant will regularly differentiate into the lens of the eye. Moolten[20] feels that the evidence strongly favors a defect in cell-competence in cases of congenital atresia of bile ducts, inasmuch as the anomaly consists of a simple failure of development and does not have the anomalous overgrowth and anachronisms of maturation seen in the dysfunction of "organizers." The latter dysfunction is thought to result in polycystic disease of the liver.

Strongly favoring an inherited developmental anomaly is the fact that Sweet[25] and Hopkins[14] separately reported families in which three children died with biliary atresia. There are six instances in the literature where two cases occurred in a family. Furthermore, associated congenital defects are occasionally noted.[23] One of binovular twins may have biliary atresia while the other remains healthy, making it highly improbably that toxins from the mother are of etiologic importance.[28]

Other theories of etiology mentioned in the literature are: (1) a catarrhal inflammatory process of the liver, descending into the bile ducts and causing their complete occlusion; (2) toxins absorbed from the mother injuring the liver and bile ducts of the fetus; (3) syphilis; (4) mechanical traction of the mesentery, twisting the ducts; (5) fetal peritonitis with adhesions and constriction of ducts; and (6) abnormalities in vascular supply resulting in the deformity of the duct. According to Mentzer[19] the wide variety of anomalies of the biliary tract occurring in about 10 per cent of all persons represent the normal arrangements found in lower animals. Certain anomalies may represent atavistic changes.[11] A knowledge of these variations in comparative anatomy of the biliary tree would indeed be essential to the surgeons.

Pathologic Anatomy

Although there are numerous variations possible in the stenotic and atristic lesions of the biliary ducts, Ladd feels that these can be classified into eight general groups. These include: (1) agenesis of the extrahepatic bile ducts; (2) complete or segmental atresia of the hepatic ducts; (3) complete or segmental atresia of the choledochus; (4) complete or segmental atresia of the gall bladder and cystic ducts with patency of the common and hepatic ducts; (5) complete or segmental atresia of the cystic and hepatic ducts—the most frequent type; (6) atresia of the extrahepatic bile ducts with patency of the cystic duct and gall bladder; (7) agenesis of the extrahepatic ducts with the gall bladder connected directly to the duodenum and (8) mechanical obstruction of the patent bile ducts due to plugs of mucous inspissated bile, stones and inflammatory reaction in the ampulla of Vater. Of great practical importance are those cases in which the common hepatic duct or the hepatic and cystic ducts and gall bladder are patent so that the bile reaches the outside of the liver and can be surgically delivered into the intestinal tract. The almost universally present cirrhosis of the liver is generally considered a biliary cirrhosis resulting from stasis of bile. It is conceivable that this portal fibrosis and proliferation of bile ducts is at least partially due to an abnormality in the congenital development, possibly a defect in the "organizer" factor, the "organizer" being the liver cells.

Pathologic Physiology

Careful chemical measurements of physiologic processes as reported in the literature on this subject, are very spotty and incomplete. However, there is sufficient information to make it quite obvious that a wide variety of liver functions are affected by the disease. As is the case in other liver diseases, the various functions may be affected to varying degrees in different cases. The principal disturbances in the physiology of liver function have been recorded as the result of: (1) excretion of bile pigment; (2) secretion of bile salts; (3) disturbance of protein metabolism; (4) blockage of portal venous flow; (5) disturbances in hematopoiesis.

The failure of excretion of bile pigment results in the principal clinical feature, jaundice. This retention of bile pigment has all the characteristics of a mechanical block and in the completely obstructed cases one can expect to find high grades of hyperbilirubinemia, not more than traces of urobilinogen in the stool and urine, large amounts of bilirubin in the urine and a high per cent of bilirubin of the direct van den Bergh type as compared with a low quantitative van den Bergh of the indirect type. The absence of bile salts in the intestinal tract has resulted in the frequent observation of large amounts of fat in the stool. This has amounted to, according to Cole[5] and Striver[20], as much as from 75 to 85 per cent of the fat ingested. The commonly observed simultaneous obstruction of the pancreatic duct of Wirsung would undoubtedly accentuate the various defects in digestion and could have some possible bearing on the advisability of an attempted surgical cure. Bleeding is a very common clinical manifestation and may well be related to a prolonged prothrombin time as the result of failure of absorption of vitamin K because of lack of bile salts in the intestinal tract. It

may also be related to the defective function of degenerated liver cells upon the vitamin K which is absorbed. The commonly observed slowed pulse and leukopenia are very likely clinical manifestations of retention of bile. The occasionally recorded retention of urea nitrogen as in our case probably relates to injury of kidney due to bilirubin excretion.

The extremely low blood serum proteins in our patient (albumin 2.18 and globulin 0.96 grams per hundred c.c.) is probably primarily the result of diffuse liver cell injury with improper protein metabolism. Since our patient only lived one week, the poor absorption of proteins from the intestinal tract could not have played a very important part in this serious protein deficiency. The commonly described[3,5,26] exodus due to terminal infections may be in part related to the disturbed protein metabolism. The frequent manifestations of bleeding may also be in part due to lack of prothrombin and fibrinogen, products of liver cell activity. It is very likely that the general anasarca observed in our patient was the result of the extremely low serum proteins.

Obstruction of venous return throughout the portal system by cirrhosis of the liver may in part account for ascites and is certainly the cause of an unusual development of the various means of collateral circulation shunting the portal blood around the liver. The exact cause of the commonly recorded low grade anemia is not established but could be related to liver cell dysfunction.

Clinical Identification

Except for the speed of onset of the universally present jaundice, the rapidity of progress of the disease, and the time of exodus, the symptoms and signs of biliary atresia of the newborn are fairly consistent. Icterus may be present *in utero* but more often develops after birth, anytime within the first three weeks. This delay is sometimes explained by the fact that there is little bilirubin formation *in utero* and that after birth there is the possibility of storage of considerable bile pigment in the liver and other tissues before clinical manifestation of jaundice occurs. In those cases where there is only a partial stenosis of the bile ducts (which are relatively few) jaundice may be considerably delayed, but once developed could last for many years into adult life.[14] Once jaundice begins, in the majority of cases, it increases to an extreme degree rapidly. There is a remarkable yellowish green color of the skin not seen in the more common cases of jaundice of the newborn. Our patient appeared to have a hypersensitive skin and had the frequently manifested hyperirritability. Apparently there is very little itching of the skin, which is so characteristic of this type of jaundice in later life. Gastro-intestinal disturbances are frequently recorded, such as diarrhea, watery stools, constipation, intestinal distention, intestinal colic, anorexia and vomiting. The stools may have a yellowish tint, particularly shortly after birth, but soon become clay colored. Quantitative urobilinogen or other accurate bile pigment analyses of the stools are essential in proving the presence or absence of bile pigment. However, they have not been recorded in the literature of this disease. The liver is generally enlarged to palpation and frequently there is a splenomegaly. The intensity of jaundice has been described[15] as varying considerably from day to day. However, bilirubin studies of the blood would probably reveal a stationary or gradually increased amount of this pigment in the blood. In one case there was reported clubbing of the fingers and toes.[25] Poor nutrition has been frequently observed in the patients living for longer periods of time. The average length of life is from five to six months but is extremely variable from a few days to over a year.[6,8] Terminal inflammatory conditions, particularly bronchopneumonia, pyelitis and upper respiratory tract infections are frequent.

A liver biopsy using the Silverman needle would almost uniformly reveal cirrhosis of the liver and retention of inspissated bile in the bile ducts, which finding would be practically pathognomonic of biliary obstruction. The biopsy should not be performed if there are clinical evidences of a bleeding tendency or if the prothrombin time is prolonged.

A differential diagnosis must include, icterus neonatorium, erythroblastosis fetalis, congenital hemolytic icterus, and severe sepsis with icterus. Excepting in those rare cases of icterus gravis in which there is extensive liver damage, all of these conditions should be easily differentiated from biliary atresia by the quantitative urobilinogen studies. Icterus gravis must be differentiated immediately by the Rh typing of the parents and infant, Rh agglutination, coagulation, and block-

ing tests of the mother's blood and the nucleated red blood cell percentage and red blood cell counts on the infant. Congenital hemolytic icterus is said to be extremely rare in newborn infants but when present should be characterized by the spheroid, hyperfragile red blood cells of this disease. Acute and chronic hepatitis and syphilitic hepatitis, both very rare in the newborn, may generally be ruled out through determination of urobilinogen content of the stool and urine and tests for syphilis in the parents and child. A liver punch biopsy as mentioned above would be very helpful. Conditions causing mechanical obstruction of bile ducts including tumors in and adjacent to the ducts, enlarged lymph nodes, due to infections[9] or tumors of the liver may be impossible to rule out excepting through surgical exploration.

Treatment

Ladd[16] gives credit to Thompson[26] and Holmes[13] for popularizing the surgical potentiality of congenital atresias of bile ducts, but it remained for Ladd to surgically cure the first infant with the condition. Since then there have been many additional cures.[2,7,9,22,27] It is generally agreed that when the diagnosis of congenital atresia or stenosis has been made, exploratory laparotomy is indicated. It is agreed that the patient should be prepared by the use of high carbohydrate, high protein and a low fat diet. Vitamin K and bile salts are indeed indicated along with determinations of prothrombin time. The age at which operation is most likely to be successful is generally considered to be shortly after the first month of life. By this time the bile ducts are large enough to be visualized and, in most cases, the infant's general condition has not deteriorated significantly. The principal aim of the surgeon is to find a common hepatic duct, gall bladder, or common duct distended with bile which can be anastomosed either to the duodenum or stomach. Hicken[12] advised visualization of the biliary tract by the hypodermic injection of opaque media during the operation. In spite of an obvious cirrhosis of the liver, Ladd feels that the regenerative power of the liver cells is sufficient after the release of the obstruction to develop into a normally functioning liver.

Summary

1. The case of a newborn infant with congenital bile duct atresias living seven days and dying with severe hyperbilirubinemia, hypoproteinemia, general anasarca and cirrhosis of the liver has been described.

2. Suggestions have been made concerning the potential usefulness of studies of quantitative urobilinogen of the stool and urine and of the punch liver biopsy for the early diagnosis of congenital biliary atresia.

3. A review of various facts and theories as derived from the literature has been briefly covered.

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THE LAST TWENTY-FIVE YEARS IN A COUNTRY PRACTICE

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IN retrospect twenty-five years seem very short. There seemed never to have been time to do what one wished to do and a trip, meeting or picnic with family or friends was always being missed. Were I privileged to relive the last twenty-five years, I would still choose the country; but I would budget my time differently. There would be more time for other things besides routine work. I would select the place for my endeavors not only by the yardstick of plenty of work, but also as to how the working conditions would be—whether congenial professional relations could be enjoyed, and decent social attitudes and activities were likely to be present in the community. In other words, I would adjust my work so as to get more out of life and probably, thereby, give more in exchange. There is more to life than work, but so often we have lived most of it before we realize this fact. So, if I could do it over, I would set aside one-half day each week for myself, besides a regular vacation.

It is in the country that professional relationships of a congenial type become important. The pressure of medical practice would be reduced 50 per cent by a 50 per cent improvement in the relationship of colleagues. By development and nature medical work is individualistic, and in the days when communications were bad there was some excuse for narrow views, mean and jealous feelings towards competitors in the same or neighboring towns. Usually these things originated in some elongated story about a patient, or some doctor's behavior, started by some busybody; and as the doctors rarely met there was no chance to air the situation and it went from bad to worse. Today, there is no excuse for this. Today, practice in the country can be as pleasant as in the city, excepting perhaps the sparsely settled areas; and here the car has taken most of the hardship out of the work, and tomorrow the plane will take the rest.

Years ago country practice was admittedly very trying—bad roads, long hours, and isolation from stimulating contacts with other men and difficulties in getting help. But there were compensations. The expectations were not as great. You were welcomed without reproach even though you were hours in getting there. You were completely on your own and gradually developed a confidence that can come only under such conditions. You had to be right; there was nobody else to rely upon. Courage and the ability seemed to develop. The word is used advisedly. When you shoulder responsibility, you do more reading and prepare yourself a lot more for eventualities. When there was was no George to do it—you did it.

It was my misfortune early to see and meet unhappy relationships among doctors, or was I too idealistic in applying the Hippocratic oath literally? It has always seemed to me that the patient has the chief claim to the doctor's undivided attention. If that is so, a doctor must never feel imposed upon if a patient desires consultation or shifts about among doctors. To give the patient the best services at all times it is essential that good will exists among colleagues. Being mortals with afflictions as such, there are always occasions when a doctor cannot tend to every call. When those situations arise there should be common decency among colleagues that the work done by the absent doctor is not undone by innuendos or aspersions. If there is a difference of opinion as to diagnosis or treatment, that could be handled tactfully without ruffling the relations. Many times in the evolution of diseases the difference of a few hours between examinations may make a difference in the diagnosis and therefore in the treatment.

We doctors have made much of the free choice of physician in contract medicine and insurance cases. In our private work there should be no difference. A doctor can hold no patient by a mortgage. The essential point is that the service rendered be of such a quality that the patient will return again and again. Some patients voluntarily shift from doctor to doctor. Some patients are such that they consider some doctor their family physician; some, for various reasons, never get that feeling about any doctor. The relationship implied in the term "family-physician," is very valuable to society if it is respected on both sides and kept on a high level. This will be true more and more as our society

becomes more complex and consequently more people are subjected to more serious strains that tend to break down personalities. In this situation the confidential relationship in the family-physician setup should do much to stabilize individuals, and, therefore, be very helpful to society at large.

One very evident change in the last several years is the coming of group practice. Though every doctor is an individualist, the pressure of events and circumstances make it necessary that the profession adapt itself, and meet the needs as they rise. Group practice even in small towns will have to come. Twenty-five years ago this would have been impossible. Today it is possible but not probable. With the prospects, however, of prepaid medical care, the profession must show its good faith by making possible the best care for the least cost. There is no other way to do that than by cutting the overhead of that service. The simplest way would be grouping all expensive services under one roof—the coming community hospital—with the offices of the doctors in close proximity, so as to utilize every investment to the fullest. This is a challenge that must be met. To realize this objective the medical schools, as well as the county and state societies, must adopt appropriate measures.

Maybe an orientation course as part of undergraduate study covering medical economics, public relations, and professional relations between patients and the doctors might well be added to undergraduate medical instruction. The county society could do much in getting young practitioners started right with regard to his responsibilities not only as a doctor but as a citizen. It is certain that a good deal more has to be done in the future to keep the profession attuned to social needs. We must speak our minds if we think that other matters besides those purely medical in scope require correction. We should be in at the policy making. For that there is a need of a wider interest. It is not too early to stir up that interest during the undergraduate course of study.

The next twenty-five years will see a contest in ways of life as intensive as in any period of history: the individual in co-operation with his fellows selecting a government on one side; an all-powerful state controlling every activity on the other side. This year we doctors in Minnesota have, so to speak, "stuck our neck out," in getting enabling legislation for prepaid medical services. It will take a lot of willing co-operation among the profession to get this working smoothly. It seems we should invite counsel from outside sources, especially as it concerns the distribution of this service. The control of the dispensing and the quality of service should rest entirely with the profession; while the distribution should be open to the public through some agency. The public pays the bills and should have a chance to have a say. If the medical profession can carry through successfully this improvement in the service to the people, it will go a long way in assuring that our American way of life can be made to work well where there is a will to succeed and to co-operate. It is only proper that medical men should assume responsibility in working out better relations and better facilities for service. Our training should be utilized not only for the profession of healing as such, but also extended to community and state problems. We should help to mold the public opinion as much as any other group in society, probably more so than any other, due to our experience. Today, especially when social planning is rampant, when so many so-called experts are trying to lead groups into all types of unknown methods for improving the lot of man, we, the medical profession, should not sit back. We should be in there, admonishing and advising. We have a responsibility greater than any other group, because our advantages of learning and understanding are greater. If we do not accept this responsibility, and act accordingly, we must assume a good share of the opprobrium for what happens, if unfavorable; and, on the other hand, we will deserve the gratitude of the public if we can help to correctly solve difficult problems. To do its full share in the future the profession must broaden its scope and help in the solution of the many problems confronting our country.

Probably the most serious question demanding a solution is that of the defense of our country in the future. Here is one problem, apparently outside the medical sphere, where we doctors should have something to say and say it. The big club to be used in getting compulsory military training on the statutes will be the deplorable physical condition discovered by the Selective Service. But it is too late to correct many of these physical and mental defects at eighteen or twenty years. The correction should be started in the kindergarten years or earlier. It would seem

proper for the medical profession to support the movement started on the West Coast, where the educational system is going to incorporate a more thorough training for health. Such an undertaking should not be too dogmatic or narrow. It should include both health education and a physical fitness program. Money spent during this period in life should bring better returns than later. Discipline should be included in the program. The setup should be such that the medical profession can aid freely in its evolution, so that it will keep abreast with medical progress and will not become a dead ritual. This would give our country a citizenry that is fit, informed, and comparatively easy to train in whatever methods a future war might necessitate. It is, of course, up to the people to decide, but we should clearly explain that compulsory military training will not remedy the conditions disclosed by the Selective Service. This method would be less costly and disruptive as well as less provocative of an armament race.

In closing, I wish to emphasize the desirability of undergraduate instruction in some of the problems with which the young physician will be faced when he begins medical practice. Such instruction might prevent many useless moves when he is thrown on his own resources. With better undergraduate instruction, too, in applied psychology and psychiatry, the young physician would be better prepared to meet the problems of medical practice and to be of more assistance to the great number of people who break under the stress of modern life.

SURGEON GENERAL URGES PROMPT RELEASE OF ELIGIBLE PERSONNEL

Major General Norman T. Kirk, The Surgeon General of the Army, expressed the desire that all commanding officers give the fullest possible co-operation towards effecting the early release of Medical Department personnel who are eligible for separation from the service under the announced policy.

At the same time he urged that all Medical Department personnel occupying key positions and who are eligible for separation under the present criteria volunteer to continue on active duty to assist in maintaining the present high standards of medical care if no replacement is immediately available. It is contemplated that a period of six months' duty will be sufficient time to allow for the arrival of a replacement or for training an officer to take over duties of key positions and thus allow all officers eligible for release to be returned to civilian life.

General Kirk requested that commanding officers make every effort to obtain replacements for Medical Department personnel eligible for release in order that those officers might be returned to civil life at the earliest possible moment.

Under the announced Medical Department demobilization policy, Medical and Dental Corps officers are eligible for release providing they meet any one of the following criteria:

(a) Adjusted service score of 80 or above.

(b) Forty-eight years of age to the nearest birthday or above.

(c) Entry on active duty prior to Pearl Harbor excepting critical specialists qualified in eye, ear, nose and throat, plastic surgery, orthopedic surgery, neuropsychiatry or laboratory clinicians. Officers qualified in these specialties are eligible for release if they entered on active duty prior to 1 January 1941 or if they meet the criteria on points or age.

This revised policy on separation is expected to return 13,000 physicians, 3,500 dentists, 25,000 nurses and a large number of other Medical Department officers to civilian life by the first of the year.

It will be necessary to retain a large number of low score men in the service for replacement for overseas men having high ASR scores. Other low-score men must of necessity be retained in the service to carry on the necessary activities of the Medical Department in this country and in theaters where American troops are operating.

It is intended that no one eligible for release will be held in the Army because there are men with higher scores overseas who have not been returned home. Eligible men will be discharged as rapidly as they can be processed for separation.

No enlisted personnel with a sufficient number of critical points will be kept because of "military necessity" except those very few men classified in one of three essential technical skills. These are: orthopedic mechanics, electroencephalographers who operate electrocardiac equipment, and radio transmitter attendants. The latter is not in the Medical Department.

CLINICAL-PATHOLOGICAL CONFERENCE

PERNICIOUS ANEMIA

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REPORT ON PERNICIOUS ANEMIA†

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The Pernicious Anemia Clinic at the Minneapolis General Hospital offers us a splendid opportunity for the study of this disease. We have a remarkably large clinic because of its situation in a city which has a large Norwegian and Swedish population. In the last five years, we have studied between 250 and 280 cases of this disease.

Pernicious anemia is a familial disease, and a good family history is, therefore, quite important. Most of our patients are of Norwegian, Swedish, or English extraction. We have one negress in the clinic whose family history reveals that she has a white ancestor with pernicious anemia. The majority of the patients are in their sixties, seventies, or eighties, and only one or two are in their late twenties.

The onset is almost always insidious. A fairly typical patient will come into the clinic or hospital with a hemoglobin of 15 or 20 per cent, and a red blood cell count of 800,000. This is a chronic process, although the final exacerbation requiring hospitalization may come rather suddenly, and it is surprising how well most of these patients get along in the presence of a severe anemia. Most of our patients are typical textbook pictures with gray hair, light-colored eyes, and a lemon-yellow skin. Other symptoms of which they complain are loss of appetite and weight, diarrhea, sore tongue, weakness, and numbness and tingling of the fingers and toes.

In October, 1940, we began treating all cases of pernicious anemia with a sterile solution of liver extract of zero potency.* This was done to study the rate of relapse, neurological changes in relapse, and to test various liver extract treatments once relapse had occurred. We found that the average rate of relapse was four or five months; that is, four or five months elapsed before there was a decrease in the red blood cell count and hemoglobin. Three patients of this group are still in spontaneous remission and have normal red cell count, hemoglobin, appetite, weight and general well-being after a five-year period of time. One patient, a ward of the city of Minneapolis, has had no form of liver therapy for the last eleven years, and has remained in spontaneous remission for this period of non-specific therapy. He is a proven case of pernicious anemia and is not receiving the very best diet.

We were rather surprised to find that when relapse occurred in a patient who had spinal cord involvement, no progression of the cord involvement could be found. Week after week, month after month, we asked them "How do you feel?" "Do you have any numbness or tingling?" "Is it harder for you to walk?" Invariably there was no complaint of an increase in numbness and tingling, and no change in their neurological picture was demonstrable. Finally, they complained of a feeling of weakness with a loss of weight and appetite, but these symptoms were not accompanied by progression of the neurological picture. We also found that patients with definite cord change exhibited no improvement in this condition once it had been established, in spite of massive and frequent administration of parenteral liver extract and supplementary vitamins. It seems to us that any improvement that is to occur in the cord pathology must be made within a few months after the onset of this condition. One of our patients died after a four-month period of rapid regression of subacute combined degeneration of the spinal cord. This case occurred before we began the aforementioned study in 1940, and the patient died from this neurological disease despite massive doses of liver extract, and in spite of the fact that his red cell count was maintained above 5,000,000 and the hemoglobin above 100 per cent during the entire period of observation. This, of course, is nothing new, and although it is a rare thing, it lends some credence to our belief that cord change is something that we do not understand too well. The sore tongue, the tingling and numbness which are so commonly a picture of early relapse in pernicious anemia may well be forms of peripheral neuritis rather than actual cord change, and these symptoms usually disappear within twenty-four to forty-eight hours after administration of liver extract parenterally. What part vitamin B deficiency may have in this picture we are unable to say at present.

We would like to mention briefly the achlorhydria which is usually present in these cases. At least 3 per cent of our patients, however, have been found to have hydrochloric acid after histamine administration, so that the presence of free hydrochloric acid in the gastric

Presented May 1, 1945, at the General Staff Meeting of The Charles T. Miller Hospital, St. Paul, Minnesota, Kano Ikeda, M.D., Pathologist.

†From the Pernicious Anemia Clinic, Minneapolis General Hospital, Minneapolis, Minnesota.

*Kindly supplied by Parke Davis & Company.

contents does not necessarily disprove the presence of pernicious anemia.

Of the complications of pernicious anemia, we wish to mention only two: namely, malignancy and allergic reactions. The one complication which we are always watching for, and for which we do an annual complete x-ray examination of the stomach and bowel, is the presence of malignancy of the stomach or the gastro-intestinal tract, the most common site by far being the stomach. Gastric polyps are a precancerous lesion, and in our opinion, their presence is an indication for their removal. About 10 per cent of our patients develop carcinoma of the gastro-intestinal tract. One patient is well today, four years after removal of a colon carcinoma.

The complications which occur in the course of treatment are really reactions to liver extract. Twenty-two per cent of our patients have had reactions from parenteral liver extract. A few years ago our figures were severely criticized, but we have had ample confirmation by other workers in the last few years. The incidence of allergic reactions at Cook County Hospital in Chicago has recently been estimated to be 27 per cent. The reactions are of two types: the immediate reaction, and the delayed reaction. The former is probably due to the inadvertent injection of liver extract into a small vein, and it is followed almost immediately by syncope and shock. Adrenalin administered subcutaneously is very efficacious, and we have had no mortality from this reaction. The other types of reaction are slower in onset and occur from one-half to six hours after the injection. These patients feel nauseated and often have local or generalized urticaria. On subsequent visits to the clinic, we give a small injection of liver extract and watch carefully for reactions. If the reaction occurs again, these patients are classified as reactors, and we feel that intramuscular liver extract must be abandoned at least temporarily. We then give them oral liver extract. A few reactions have occurred from oral liver extract. One or two of our patients have not done well on this type of therapy, and we are going back to the old method of giving them raw liver juice, extracted from a pound of raw liver and given as a divided daily dose mixed with tomato juice. The remarkably favorable response some of our patients have had to this rather unpleasant product leads us to suspect that something important may have been removed in the process of refining the oral liver extracts.

We have found that the bone marrow study is very important, not only in the diagnosis, but in the follow-up of the patient with pernicious anemia. Certainly a sternal biopsy is not necessary in every case of pernicious anemia, but in the doubtful cases, or in the case which does not respond to liver extract, we have found the bone marrow study very helpful. We have been particularly interested in the response to liver therapy of pernicious anemia patients with liver disease. Sternal biopsy in these cases usually shows a high percentage of fat in the marrow, and we have come to believe that this, in itself, is an indication of liver disease, and we have seen the fat regress to normal values in a few patients by the use of Brewer's yeast in large quantities, or by the use of choline chloride in 1 per cent solution given intravenously, for five to ten days.

Another finding that is not at all uncommon in patients with pernicious anemia who are not responding well to liver therapy is the development of an atrophy of the bone marrow. Sternal biopsies in these cases will reveal a very small myeloid-erythroid layer. No amount of liver extract will possibly raise the red count to 5,000,000 in these cases, and it is sometimes impossible to prevent ultimate death from an anemia which formerly was called aplastic. This form of atrophy of the marrow occurs to lesser extent in almost all people in advanced age, and it is not limited to cases of pernicious anemia.

Our dosage of liver extract in a new case of pernicious anemia is the more or less standard dosage employed in other parts of the country. The new case receives 3 c.c. of a rather potent, usually a 10 or 15 unit, liver extract, daily for three days. On the seventh, eighth, or ninth days, after the reticulocyte response has been studied, an additional 3 c.c. are given; and after ten more days we usually give 3 c.c. twice weekly until the blood picture has reached its maximum count of approximately 5,000,000 in the male and 4,500,000 in the female. After that, our average dosage is about 3 c.c., or 45 units, every three or four weeks.

In our experiments with various types of liver extract, we have found great variations in response. Very small doses of low potency liver extracts were found efficacious in treatment. As little as 0.1 c.c. of a 1 unit liver extract given daily was found to produce a maximum rise of red blood corpuscles in many patients. Some types of liver extract were found to cause a seemingly maximum rise in red count and hemoglobin without any appreciable rise in reticulocytes.

In conclusion, let me re-emphasize the importance of a yearly gastro-intestinal study in every case of pernicious anemia. Although this is an expensive procedure, it is certainly indicated in view of the high incidence of malignancy in pernicious anemia.

HEMATOLOGICAL DIAGNOSIS OF ADDISON-BIERMER'S DISEASE (PERNICIOUS ANEMIA)

Emil M. Schleicher*

A large proportion of the population of Minnesota is Scandinavian, and among the Scandinavians are encountered more cases of pernicious anemia than among any other racial groups. For that reason, Dr. Sommers and I have been able to maintain a large clinic at the Minneapolis General Hospital and to enjoy the unusual opportunity to study all phases of this interesting condition.

Our data show the same racial and hereditary trend as those accumulated in Sweden, Norway, Denmark, England, Germany, and Northern France. There is no

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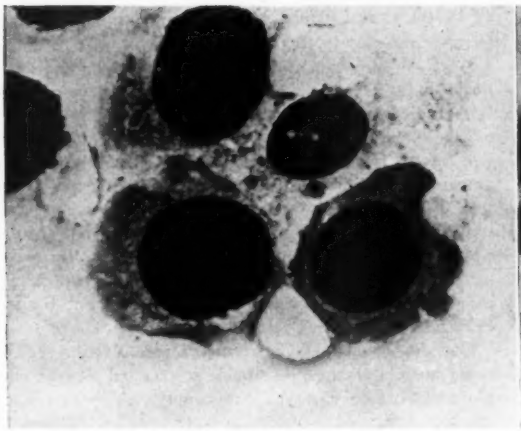

Fig. 1. Sternal marrow imprint. Diseased erythrogenic reticulum. Note the difference in the pattern of the nucleus from that shown in Figure 3.

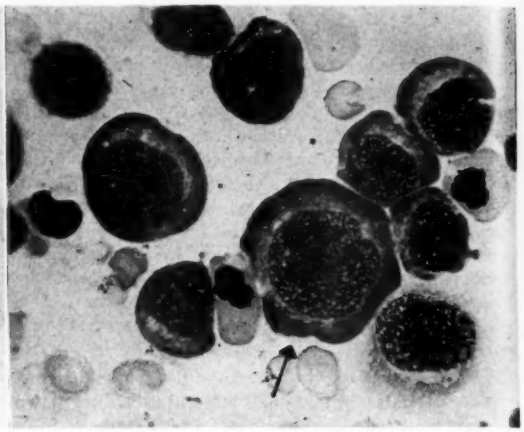

Fig. 2. At arrow a promegaloblast. The other cells are megaloblasts at various maturation stages. Note the difference in the pattern of the nucleus from that shown in Figure 4.

doubt in the minds of those who study this disease that it is hereditary. Many families are known in which the disease occurred in successive generations.

I presume that you are well acquainted with the hematological terms. I wish to state that the main purpose of the hemopathologist is to confirm or rule out the diagnosis of this disease in a given case. We feel today that no diagnosis of Addison-Biermer's disease (pernicious anemia) should be made without a bone marrow study. Definite hematologic criteria of this disease have been worked out. That we have been able to recognize the disease quite early at the Minneapolis General Hospital is due to the close co-operation between the clinician, the hematologist, and the medical technologist. The disease, as you all know, has phases of relapse and remission. Most of our patients were first seen in relapse. The bone marrow organ at this stage is generally well affected by the disease. The presence of the promegaloblasts in the bone marrow is essential for the diagnosis of Addison-Biermer's disease from the hemopathologic point of view. Thus the recognition of the disease is not difficult. To detect the disease when it is in the stage of remission is the problem. At the present time, no specific therapy is instituted in doubtful cases. We let the patient relapse. Eventually, the bone marrow will show the specific morphologic picture considered essential for the diagnosis of this complex disease.

In studying the bone marrow, it is well to discuss the "units" which make up the marrow tissue. The normal pattern of these units is quite constant. That means, the fat, the hematopoietic tissue and the vascular system are present in given quantities and proportions. The size of the units and their component parts will be altered when the disease affects the bone marrow. This feature will give a good idea of the functional state of the bone marrow organ.

Take the case of Mr. X. He is believed a potential case of Addison-Biermer's disease. The first bone marrow examination may not be typical or conclusive. He will then receive nonspecific therapy until the clinical and hematologic data show that the disease is in the relapse phase. Then the bone marrow is again studied, and the pattern compared with the standard patterns obtained from cases in relapse, partial relapse, or partial remission. The pattern thus revealed is not only a distinct aid in diagnosis, but also gauges the severity of the disease by the character of the marrow morphology. When the disease affects the bone marrow, the units become hypertrophic. The M-E (Myeloid-Erythroid) volume per cent (determined by means of a Wintrobe hematocrit), which means the total mass of nucleated marrow cells, increases, the fat quantity becomes reduced, and eventually the fat disappears altogether. The reticulum becomes hypertrophic, pathologic erythroblasts, myeloblasts and megakaryoblasts are proliferated.

Looking at a small area of such marrow greatly magnified, one sees a distinct pattern. Reticulum cells (primitive mesenchyme) form the framework of the bone marrow. They change their morphology when the disease affects the marrow. Individual reticulum become enlarged. The reticular nucleus appears hydropic. The parachromatin is prominent. The nucleoli are indistinct, the nuclear membrane is not conspicuous, the cytoplasm is basophilic and not homogenous. The entire cell has the appearance of being proliferated by a diseased reticulum (primitive mesenchyme). These totipotential cells undergo pathological mitoses. These cells give rise to the promegaloblasts, the highly diagnostic cells. If these pathological erythroblasts are present, it means only one thing, namely, Addison-Biermer's disease (pernicious anemia). The fact that promegaloblasts are proliferated by the mother reticulum nullifies the concept that this tissue gives rise to the normal erythroblasts. Indeed, one does not expect cancer cells to give rise to normal epithelium. Thus diseased reticulum gives rise to promegaloblasts in con-

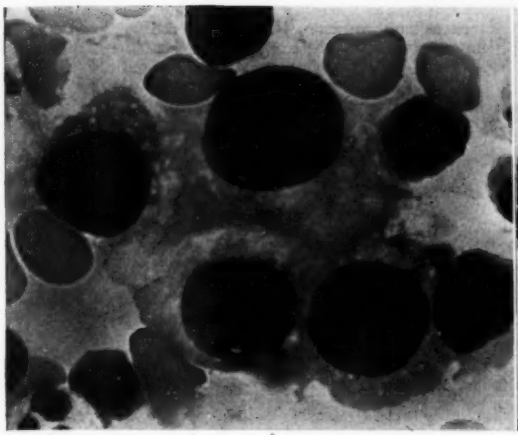

Fig. 3. Sternal marrow imprint. Normal erythrogenic reticulum.

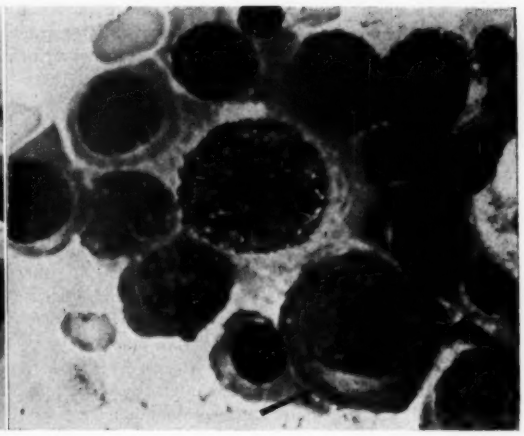

Fig. 4. At arrow a pronormoblast. The other cells are normoblasts at various maturation stages.

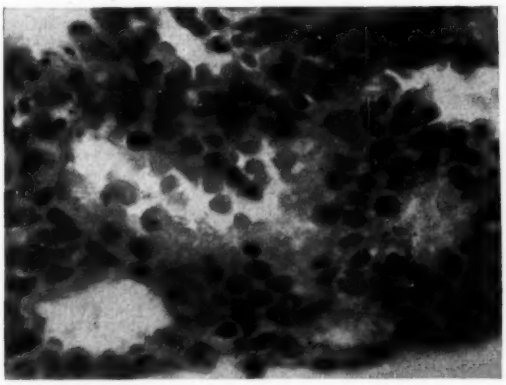

Fig. 5. Histologic preparation of a sternal marrow unit showing metastatic adenocarcinoma.

trast to the normal reticulum which proliferates pronormoblasts. The promegaloblast (Fig. 2) when placed next to the pronormoblast (Fig. 4) is morphologically so conspicuously different that both cells can be easily distinguished at a glance. The promegaloblast rarely enters the general circulation. In over 7,000 sternal biopsies, representing all forms of hemopathologic states, we have not found the promegaloblasts and respective maturation stages in diseases other than pernicious anemia or biologic variants of this hereditary-complex clinical entity. Thus, it is believed that promegaloblastosis is a more sensitive criterion of this disease than achlorhydria, smooth tongue and macrocytic anemia. After the administration of liver extract, the promegaloblasts undergo mitoses and produce normoblast-like megaloblasts. The latter cells are difficult to separate from physiologic normoblasts. Therefore, it may become impossible to make a diagnosis of pernicious anemia, when the patient has received liver extract for even two or three days. By this time, the marrow morphology is of a transitional character, and the recognition of the disease is difficult. Various macrocytic anemias will respond to liver therapy, and thus it is important that the bone marrow is examined before any therapy is given. We believe that no patient is so ill that sternal aspiration cannot be done before therapeutic measures are instituted. At the Minneapolis General Hospital, all patients suspected of having Addison-Biermer's disease get a sternal aspiration to confirm or rule out this complex disease. The diseased reticulum retrogresses under liver therapy. Just as radiation controls carcinomatous growth, and thus normal growth is given a chance, liver therapy physiologically activates the quiescent reticulum, resulting in normal erythropoieses. Within five to ten days, the pathological reticulum (Fig. 1) will have disappeared, and a new physiological reticulum (Fig. 3) will have taken its place. As you can easily see, this new reticulum is morphologically entirely different. The reticulum syncytia are smaller, the nuclei are deeper staining, have sieve-like chromatin, as compared with those of the pathologically activated reticulum where the nuclear chromatin is granular. The pronormoblasts are quite uniform in size. Production of physiological normoblasts indicates that normal hematopoiesis has been restored. It is understood that pernicious anemia is not curable, and at no time will there be a complete return to normalcy of the bone marrow. Once the disease has affected the bone marrow organ, it leaves scars, so to speak. Liver therapy does not ease these scars completely. It is thus very important that enough of the normal reticulum is left which will form the foundation upon which the bone marrow organ reconstructs itself. The loss of reticulum means the loss of functional bone marrow. If the volume of the active bone marrow is greatly reduced, we speak of the atrophy of the organ. Such a state is reflected by an erythrocyte level below normal. There are quite a number of patients in our Clinic that have a reduction below the accepted standard peripheral blood level in spite of the adequate therapy and the absence of complications.

What are some of the complications? A complication which Dr. Sommers pointed out is that of fatty metamorphosis of the bone marrow organ. The sternal marrow unit has a large number of fat spaces and very small areas of hematopoiesis. The patient may be well for a time but suddenly fails to respond. The problem at hand is to reduce the fat quantity and thus overcome the refractory behavior of the patient.

From time to time we encounter such cases of which the following is an example. The patient is refractory. The gastro-intestinal x-ray is negative. The gastroscopic examination reveals a slight elevation of the mucosa of the pylorus. No liver impairment by routine tests is demonstrated. The sternal puncture reveals a metastatic adenocarcinoma of the marrow (Fig. 5). An exploratory laparotomy, then, demonstrates a diffuse carcinoma of the stomach. In another case, a benign polyp is presumed to be present by x-ray examination and by the gastroscope. The marrow biopsy, however, revealed a metastatic carcinoma, and, at operation, a medullary cancer of the stomach was demonstrated. I have also demonstrated miliary tuberculosis in the sternal marrow in cases in which the hemoglobin continued to drop in spite of treatment with iron.

I may emphasize a point here—do not change to another brand of liver extract simply because there is no therapeutic response. Re-examine the patient carefully when symptoms of relapse become apparent and examine the bone marrow, if at all possible. You may be surprised to find the answer to your problem wholly unexpected up to the time of the sternal puncture.

Discussion

DR. KANO IKEDA: I am particularly impressed with the results of sternal biopsy carried out according to the technique of Schleicher, as demonstrated here this evening. I have long sought to learn a method of preparing bone marrow tissue, which is simple, yet would furnish satisfactory and practical information to the average clinical pathologist. Several times in the past ten years, I have attended demonstrations on sternal biopsy procedures by men who are considered authorities on the subjects. Each time I came away discouraged, because their technique and the marrow preparation have never appealed to me as practical in the average clinical laboratory. The procedure, as outlined by Schleicher, on the other hand, appeals to me as the most satisfactory and practical in the hands of the average clinical pathologist. It is bound to receive universal acceptance, as a useful and reliable diagnostic method. Its routine use, not only in cases suspected of pernicious anemia and other blood dyscrasias, but in other obscure diseases may now be freely predicted.

A proper preparation of bone marrow material has long been considered difficult. Schleicher has pioneered in this field for a number of years and has come out with a superb technique which is comparatively simple, yet most reliable and diagnostic, which includes not only a method of sternal puncture itself but a new staining method which guarantees a good diagnostic smear, often difficult to obtain in the average laboratory. You have just seen a sample of his work. He is to be congratulated for stimulating the interest of the medical profession of the Twin Cities in the use of sternal biopsy.

He has, furthermore, clearly demonstrated to us the pathogenesis of pernicious anemia with the aid of these excellent lantern slides, illustrating the steps in the development of the promegaloblast from the pathologcial reticulum cell, in the bone marrow, which in his opinion is the absolute proof in the diagnosis of this disease. He has compared this process with the development of normal erythrocytes, and differentiates, convincingly, the promegaloblast of pernicious anemia from the pronormoblast which is the immediate derivative of the normal reticulum cell, and from which the erythrocyte is derived in the normal bone marrow.

A word of caution is in order, however. The technique of sternal biopsy itself should be mastered. The preparation of sternal marrow must be carried out only by a trained technician. The marrow smear and section, thus prepared, must be interpreted. The use of sternal marrow diagnosis must, therefore, be entrusted only to the trained men.

Although, as has been mentioned, the average clinician rarely sees a case of pernicious anemia, as a clinical pathologist I am called upon to aid in the diagnosis of this disease quite frequently. I see within a year a number of blood smears on which I would make a definite diagnosis of pernicious anemia, a number of other macrocytic anemias in which a positive diagnosis cannot be given, and still others in which I would give a negative opinion. In none of these cases, have bone marrow smears been examined to confirm or disprove my diagnoses. Usually, in addition to the blood findings, the clinician depends on the well established clinical criteria, including the negative free hydrochloric acid in the gastric contents, with or without histamine, the negative gastro-intestinal x-ray findings and certain neurologic manifestations. Liver therapy is, then, instituted, and the patient improves. Thus, we have made a justifiable diagnosis of pernicious anemia in a certain percentage of cases without the marrow smear. At the moment, I am inclined to rely heavily on the peripheral blood findings, together with the characteristic cardinal clinical findings, in the routine diagnosis of pernicious anemia. This assertion seems to be especially valid, at least, in cases of severe anemia with the hemoglobin below 40 or 50 per cent. I am fully aware that Schleicher and some other qualified hematologists, with their vast clinical experience, supported by sternal biopsy, will repudiate this view. I am looking forward to the day, with some misgivings, when the clinician will demand a positive proof in the marrow smear, whenever we make a diagnosis of pernicious anemia on the peripheral blood smear. I further predict that sternal biopsy will be a routine diagnostic measure, now that the technique of preparing the marrow material has been perfected by Schleicher.

We are deeply indebted to these gentlemen for their instructive and revealing presentation.

DR. C. N. HENSEL: In the days when a good many of us took our hematology at medical schools, there was a controversy as to whether pernicious anemia was caused by some toxic agent or whether it was the disease of the bone marrow. I think the gentlemen tonight have very nicely defined the disease. That individuals of the Norwegian-Swedish race, between the ages of 50 and 70, served as basis for their redefinition of the disease is most interesting. Further, their point of view regarding the type of pernicious anemia that occurs in pregnancy, in benzol poisoning and many other toxic states is most constructive. It would be interesting to know whether with the advent of a broader understanding of vitamins in nutritional diseases, the percentage of new cases that are coming to the clinic are increasing or decreasing, whether the general nutritional changes have any effect on the disease, because we know that the liver is a great storehouse of vitamin B and vitamin C.

(Continued on Page 870)

NOTES ON THE HISTORY OF MEDICINE IN HOUSTON COUNTY PRIOR TO 1900

By NORA H. GUTHREY†
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(Continued from the September Issue)

Biographical Sketches*

The paucity of biographical material available concerning the pioneer physicians of the Middle West and of the Northwest is unfortunate. The stories of few of these men ever were written; data are buried in old correspondence and books of unknown or inaccessible possession and in faulty memories. The notes presented here on pioneer physicians of Houston County are unavoidably incomplete. It is hoped that before the ultimate publication in book form of the history of medicine in Minnesota, material concerning additional early medical practitioners in the county as yet unchronicled and additional material concerning those men who have been listed, can be obtained. That only brief mention is given to some of the pioneer physicians is evidence, not of slighting discrimination, but rather of lack of authentic information. All had part in the development of their communities and of the county and in the advancement of scientific medicine and surgery.

John W. Albee, son of William and Charlotte Wood Albee, both of whom were of English descent and natives of Rhode Island, was born at Burrellville, Rhode Island, on February 14, 1829. There were three other sons, Charles, Loren and Horace. Charles came to Houston County, Minnesota, in the spring of 1854 with a group of pioneers from Burrellville and settled in Portland Prairie, a community partly in Winnebago Township and party in Wilmington Township. John followed in 1856.

John Albee received his early education in the schools of Burrellville and worked in a store in the town until he joined the colony in Houston County,

*Mrs. George (Elizabeth West) Edward, widow of Dr. George Edward, of Canton, Fillmore County, Minnesota, accomplished excellent preliminary field work, during a period in 1941 and 1942, for the Olmsted-Houston-Fillmore-Dodge County Medical Society in the difficult task of collecting biographical data concerning pioneer physicians of Houston County (and Fillmore County). Whenever possible, she carried on correspondence and obtained personal interviews with friends and acquaintances who knew the early physicians or had information about them, and especially with members of the families of the physicians. She referred to records of Houston County, the History of Houston County of 1919, certain old newspapers for comments and obituaries, and Mervin's Business Directory of Minnesota of 1869. Her compilations of data she submitted in every instance possible to some authoritative person, a relative of the physician in question, if known, for criticism.

These biographical data have been incorporated in the accompanying sketches; the arrangement has been changed and some anecdotes have been omitted. Whenever they have been obtainable, the writer has added data from official medical registers, records and resolutions of medical associations, reports of the State Board of Health, from commercial directories and from medical directories, as being of historical value. About some of the early physicians concerning whom only the name had been available, information has been discovered, and the names of additional physicians have been included. Bibliographical notes will appear at the close of this article.

Grateful acknowledgment is made here to the many persons in Houston County and elsewhere; lay citizens, officials, physicians, writers, editors, librarians and other professional workers who have been helpful in the obtaining of recorded data and of reminiscent and general historical information.

where he made his home with his brother and family and with them faced the hardships of pioneer life. Severe winter weather and seasonal floods made it difficult at times to reach sources of supply and occasionally hunger was near all settlers; the figurative threat of the wolf at the door was heightened by the literal danger, for wolves were known to attack lone pedestrians in the region. The Albee home was the headquarters for all the New Englanders who had come to Portland Prairie. The family was influential in the organization of the local Methodist Church.

Not long after he came west, John W. Albee began the study of medicine at Scudder's Eclectic Medical College in Chicago and in 1860, after his graduation and return to Minnesota, he was licensed by reciprocity and began general practice in Caledonia, using his rooms as his office. For a time he served as county physician. After 1883 he practiced under an exemption certificate. He followed certain original, effective methods of his own that still are recalled with affectionate humor. Always, it has been said, when he was examining a patient, he would keep up a characteristic running comment, almost *sotto voce,* which diverted and amused the patient and, which no doubt was its purpose, obviated the undesirable effect of solemnity and tension. Members of his family have described him as kindly, but blunt, "with very little use for people who were trying to make themselves sicker than they were." On one occasion when he had been called to see a woman whose husband said that she was having a hysterical fit, Dr. Albee found the patient lying rigid with her eyes closed. He thought that he could detect a slight flutter of her eyelids, however, and said to the husband, "I believe I'll try some skunk's blood on her." Immediately there were signs of recovery.

When Dr. Albee's health began to fail, in 1890, he retired from active practice and, having remained unmarried, returned to the home farm to live with his brother Charles and his nephew Alfred. He died there on October 3, 1900; the cause of death was obstruction of the bowel. A kindly, helpful man, "Dr. John" was respected and much beloved throughout the large community that was the field of his work.

A. A. Anstey practiced medicine in La Crescent Village and Township probably in the seventies, certainly well into the eighties.

Leslie Avery, a physician of the regular school, was practicing in Caledonia in the early nineties.

Alexander Batcheller, one of a group of settlers from Rhode Island, came to the community of Portland Prairie, near Eitzen, in 1854, and immediately became an active member of community and county life. When the post-office of Portland Prairie was established in Winnebago Township, in 1855, Dr. Batcheller became postmaster and served until a successor was appointed regularly; at this time the office was taken into Wilmington Township and its name changed to Wilmington. In 1856, when a mail route was established between Brownsville, Minnesota, and Dorchester, Iowa, Dr. Batcheller operated it. Beginning in this year, for nearly four years he served as a member of the county governing board and also on the board of Wilmington Township. At the first town meeting in Wilmington, on May 11, 1858, when the historic decision was made that hogs should be permitted to run wild in Wilmington Township, Dr. Batcheller was chairman of the board and when, on September 14, 1858, the first Houston County Board of Supervisors held its first meeting,

in Caledonia, he was present. Subsequently he was appointed a member of a committee to draw up rules by which the board was to be guided and also of the regular committee to oversee the treasury, claims, accounts and printing.

His public spirit was expressed as fully in other ways, less official. In those times, because of imperfect facilities for transportation and the consequent uncertainty of delivery of mail, there were few subscriptions to newspapers among the settlers. News when received was not news, but history. Dr. Batcheller, in an attempt to enliven the community, organized a debating club, which met in his home or, after 1860, in the schoolhouse; at the meetings there were argued more or less heatedly such questions as those of nature and of art, whether or not capital punishment should be abolished, and others equally productive of discussion. And in this period, in 1856, when the Caledonia Academy was organized, Dr. Batcheller was one of the trustees. His family history and his training in medicine and the details of his professional experience, like those of many another pioneer physician, are not known.

William W. Bell was born on April 18, 1838, at Philadelphia, Pennsylvania. He received his early education at Cannonsburgh, Washington County, Pennsylvania, and his medical grounding at Jefferson Medical College, in Philadelphia, from which he was graduated in June, 1859. With the coming of the Civil War one William W. Bell, almost certainly the same man, enrolled on August 28, 1861, and was mustered into service on October 15, 1861, at Camp Orr, Pennsylvania, as a corporal in Company A of the Seventy-eighth Pennsylvania Regiment of Volunteer Infantry. In October, 1862, he was reduced to private and was honorably discharged as such on March 23, 1863, at Murfreesboro, Tennessee. He again enlisted on September 3, 1864, at Greensburg, Pennsylvania, as a private in Company F of the 206th Pennsylvania Regiment of Infantry and five days later was mustered out as a private by reason of promotion to first lieutenant. Accordingly, he was mustered in on the following day, September 9, as a first lieutenant of the 206th Pennsylvania Infantry and was honorably discharged and mustered out on May 15, 1865, his service no longer being required. He had served in the battles of Murfreesboro, Nashville, Lookout Mountain and in other engagements and had been with Sherman on the march to the sea. Dr. Bell practiced medicine in Philadelphia from 1865 to 1880, when he came to Brownsville, Houston County, where, it has been recorded, he had an extensive medical practice into the nineties.

Paul Bjornson, one of a family of eight children, was born in Iceland on May 1, 1853. His brothers and sisters were Theran, Anna, Haldrun, Sarah, Sigrun, Swan and Oliver, of whom, in 1941, none was living. Oliver, the youngest, became a physician and practiced in Winnipeg, Canada, until his death in 1938.

The father, Bjorn Bjornson, a native of Iceland, was employed as an agent to encourage emigration and to bring passengers from Iceland to America. When he brought his family to the United States is not known, but Paul, who received his early education in the public schools of Iceland, studied medicine at Rush Medical College, in Chicago, and was graduated in the early seventies. In Chicago he gained the interest of Dr. Nicholas Senn, who advised him, because of information received from Dr. Senn's relatives in Houston County, to go to the village of Houston, and the young man, then twenty-six

years of age, settled there, the only resident physician, in 1879. A member of the Lutheran Church, a student and an intelligent and indefatigable physician, Dr. Bjornson fitted well into the community. In 1880 he was appointed county coroner and he was still serving when on April 24, 1881, his untimely death occurred.

Not long after his arrival in Houston, Paul Bjornson had been married to Julia Foss; there was one child of the marriage, a son, Burns, who died in 1891. Some years after her husband's death Julia Foss Bjornson was married to A. H. Hvambsahl, of Houston. From Mrs. Hvambsahl have come descriptions of some of the hardships and struggles of the young physician. It was not until shortly before his death that he had been able to buy a team and buggy with which to make his professional calls. Until then he had walked to nearby homes and had hired livery rigs to travel greater distances if the families who needed him did not send transportation. Usually, however, when the call was from an outlying neighborhood, some one came with a team and lumber wagon for him, and his tedious rides over rough, jolting roads in almost springless vehicles were many. On one such occasion, when he had gone to officiate at a confinement case, he was long in returning. On the second day of his absence Mrs. Bjornson was worried and on the fourth day she was almost frantic, when he finally arrived safely, "happy that he had been able to save two lives."

E. W. Bowles, a member of the regular school of medicine, was in Brownsville around 1886 and 1887.

P. T. Bowen was practicing medicine in the village and community of Houston in 1869 and 1870 and it appears that he was earlier there or elsewhere in Houston County, judging from references to his association with Dr. S. V. Groesbeck in 1864 and 1865 and early mention of him as a contemporary by Dr. G. J. Sheldon, who entered the county in 1853, in his memoirs of eventful pioneer years in the county.

William E. Browning was born at Exeter, Ontario, Canada, on July 31, 1873, one of a family distinguished by the number of its members successful in the medical profession. His father, Dr. J. W. Browning, a prominent Canadian physician, was born in Somerset, England, the son of William J. Browning, an English watchmaker who brought his family to Canada in the early fifties. J. W. Browning, after receiving his degree in medicine from Victoria University of Toronto, practiced medicine in Exeter, where he also operated a drug store and took an active part in civic affairs; especially interested in public welfare, he long served as president of the local county reform association. Dr. J. W. Browning was married first to Nellie Cash, who was born in Ontario in 1848, the daughter of David Cash, a manufacturer, a native of Wales. There were two children of this marriage: Addie, who became the wife of Judge George Mahaffy, of Medicine Hat, Alberta, and William E. Browning. After the death of his wife, Dr. J. W. Browning was married to Elizabeth E. McDonnell. Five children were born to them: Harry J., a physician at Exeter; Percy H., at one time associated with the Dominion Rubber Company at Toronto; Eva May, wife of George Hawkins, of Exeter; Earl F., a merchant, and Hazel L., wife of Oliver Becker, of Hamburg, Ontario.

William E. Browning, after receiving his preliminary education in the

schools of Exeter, entered McGill University, in Montreal, from which he was graduated in the spring of 1899 with the degree of Doctor of Medicine and Doctor of Surgery. His medical education was supplemented by a few months of practice with his father. In December, 1899, attracted by the financial opportunity offered by the thriving western community, he came to Caledonia, Houston County, where he entered upon a long and distinguished professional career. Even while he was in college, his dream had been at some time to be at the head of a hospital of his own, and this ambition was realized when, in 1903, he established the Caledonia Hospital. So rapid and sound was its growth that by 1908 it was necessary to replace the first small institution with a large, modern, thoroughly organized and equipped hospital in which Dr. Browning put into excellent effect some of his original ideas about diet and the care of patients.

Always identified with the advancement of his profession, Dr. Browning was helpful to young physicians who came under his influence; he was worker for public health and sanitation, and long served as health officer for Caledonia; and he was active in various medical societies. Instrumental in the organization of the Houston County Medical Society, which later merged with the Fillmore County Medical Society, he served for several years as its president. He was a member of the Southern Minnesota Medical Association and its vice president; the Minnesota State Medical Association, the American Medical Association, the British Medical Association and the Association of Railroad Surgeons of America; and he was a Fellow of the American College of Surgeons. He kept in touch with scientific progress by study at home and abroad. In 1928 he and Mrs. Browning were in South America with a tour of the American College of Surgeons and from there continued their trip into Asia and Europe, where Dr. Browning took post-graduate work in surgery at Vienna.

Public-spirited, Dr. Browning worked faithfully for enterprises that would benefit the community. He was president of the local pension board in 1918; a member of the good roads committee and president of the Houston County Automobile Association; vice president and president of the Caledonia Commercial Club; chairman of the Houston County Chapter of the American Red Cross during World War I. Long active in the work of the Rotary Club in the district, he organized the Rotary Club of Caledonia and was its first president. He had various fraternal affiliations; in the Masonic organization he attained thirty-two degrees. He was a member and supporter of the Methodist Episcopal Church.

Dr. Browning's hobbies were intellectual diversions. He had one of the finest exhibits of Indian relics, curios and rare fossils in the state, and his collections of stamps and coins, among the most nearly complete in the Northwest, had been gathered from practically all civilized countries of the world.

William E. Browning was married in 1900 to Dorothy J. Gould, of Exeter, Ontario. There was one child of the marriage, a son, E. Reginald. Some years after his wife's death, Dr. Browning was married to Selma Kittleson, who assisted him in the supervision of his hospital and who after his death continued to manage the institution.

On May 5, 1929, at the village of Wilmington, Dr. Browning was showing to a group of the local citizens the moving pictures that he had taken in Norway and the Holy Land the previous year and had just finished his talk when he suddenly was taken ill. He became unconscious before the short distance from Wilmington to Caledonia could be covered and twelve hours

later, on May 6, 1929, he died in his hospital from cerebral hemorrhage. He was survived by his wife, his son, two sisters, three brothers and his father, who at the age of eighty-six years was continuing in medical practice.

Albert J. Carpenter was graduated from the Eclectic Medical College of New York in 1871 and by 1878 had come to Houston County and into the community of Sheldon, where he practiced as physician and dentist. By 1883 he was in Hokah and after December 31, 1883, he practiced under exemption certificate No. 710-3. Dr. Arthur M. Crandall, in Hokah from 1896 to 1903, knew Dr. Carpenter as a state licensee who had retired from medical practice by 1896 at an advanced age. When in that year Dr. Carpenter died, Dr. Crandall, who a few months earlier had come to Hokah, signed the death certificate.

George Johnson Cass was born at Waterford, Massachusetts, on September 12, 1847. His father was William Cass, who was born at Smithfield, Rhode Island, a direct decendant of General Lewis Cass. His mother was Sarah W. Sturdy Cass, born at Attleboro, Massachusetts, the only daughter in a family of eight children. She was a teacher and all of her brothers were jewelers in Attleboro. William and Sarah Cass had four children: George J.; Charlotte (Mrs. McNelly, of Portland, Minnesota); Adelaide (Mrs. Eddy, of Fort Dodge, Iowa); and William, of Lyons, Nebraska, who in 1941 was the only member of the family who was living. The record available is meager, but it seems probable that the Cass family was among the many settlers from Massachusetts and Rhode Island who came early into southern Houston County.

George J. Cass received his elementary education in the schools of Waterford and in due time took his degree in medicine, probably around 1880, at the Eclectic Medical Institute of Cincinnati, Ohio. He was married to Ellen Louise Healy, a teacher, who was born at Dudley, Massachusetts. They had three children, Edwin Lewis, Helen M. and Harriet H. Cass. Helen became a nurse, employed at the Great Northern Hospital of Missoula, Montana; Harriet was married to E. D. Rowland, of Mexico, Missouri.

When Dr. Cass began his general medical practice in Houston County in the eighties, it was in the community of Portland Prairie, in Wilmington and Winnebago Townships, where he remained until the late nineties, or possibly 1900, when he removed to the larger village and more populous community of Caledonia. During part of the ensuing ten years in Caledonia he assisted Dr. W. E. Browning in the Caledonia Hospital. He was a member and an elder of the Methodist Church and was a Mason. A faithful and able practitioner of medicine, he was esteemed in the communities that he served.

F. Castle practiced medicine for a time in Caledonia in the late seventies. He has been recalled in the village as a gentleman, tall, personable, active, well groomed, who drove fine and fast horses and who was esteemed in the community. He was one of the local residents who was invited to give commencement addresses at the exclusive Caledonia Academy and he is said to have been engaged to marry a daughter of a local family. Whatever his reason for leaving Caledonia, the impression remains in the community that "he went to the Dakotas to go bonanza farming." A record of his professional qualifications has not been discovered.

—— **Chase,** brief mention has it, in 1860, was already an "old resident" of the community of Mound Prairie, perhaps earlier than Dr. G. J. Sheldon, who has figured so largely in the story of the township.

Andrew J. Christensen practiced medicine in Caledonia in the early eighties and perhaps long before. When the Affidavit Ruling of 1887 was passed in Minnesota, Dr. Christensen was one who filed an affidavit, prior to 1890, with the secretary of the State Medical Examining Board, that he had been engaged in the practice of medicine in the state previous to July 1, 1887.

—— **Cowles** was one of the physicians in Houston County who were mentioned as contemporaries by Dr. Giles J. Sheldon, of Mound Prairie, in his diaries between the years of 1853 and 1880.

Arthur Murphy Crandall was born on October 11, 1870, in Pleasant Valley Township, Fayette County, Iowa. His father was David Venrenzulor Crandall, a farmer, a native of Chautauqua County, New York, who had removed to Fayette County in 1855. His mother, Rachel Ardelia Thompson Crandall, born at Delphi, New York, was a teacher in the public schools before her marriage. There were four children, Anna, Nettie, Fred Stanton and Arthur Murphy, of whom, in 1941, Anna (Mrs. Knight, of Fayette, Iowa) and Arthur were living.

Arthur Crandall spent his boyhood on the farm in Fayette County and acquired his early education in the country schools. He completed the course of the Clermont (Iowa) High School, from which he was graduated in 1889 as valedictorian. For two years he taught country school and then began to study medicine under a preceptor, Dr. Joseph E. Eaton, of Lincoln, Nebraska. For a time subsequently he was a student at the University of Nebraska before completing his medical studies at the Chicago Homeopathic Medical College, from which he was graduated on March 17, 1896. First licensed to practice medicine in Iowa and Nebraska, in 1896 he was licensed, by examination, to follow his profession in Minnesota.

When, on April 18, 1896, Dr. Crandall opened an office in Hokah, Houston County, his coming was welcomed by the village, for the only physician then living there was the elderly Dr. A. J. Carpenter, who some time since had retired from practice. Hokah, so flourishing in the early years, by 1896 had a population of about 500. Dr. Crandall served as coroner of Houston County from 1899 to 1902, inclusive. In another branch of service he has recalled an incident typical of the opposition to official action which physicians occasionally experience: the commitment by him and Dr. O. F. Fischer, of Houston, of an old veteran of the Civil War to the State Hospital. . . . The patient had been "packing a loaded .38 caliber revolver and displaying certain Damascus blades or daggers," at the same time hinting ominously as to what would happen if certain critics of a local resident were not more complimentary. A friend of the old veteran remarked with some bitterness that the physician-jurors on the case were "more mentally awry than the poor old trapper and soldier."

Arthur Murphy Crandall was married to Lydia Wilhelmina Miller, of Iowa. Dr. and Mrs. Crandall had two sons, Keith David, a registered pharmacist, of St. Peter, Minnesota, and Lieutenant Riel Stanton Crandall, a graduate of West Point, who in 1941 was stationed at Schofield Barracks, Hawaii.

When Dr. Crandall left Hokah in 1903 for the purpose of studying at the Medical College of the University of Illinois, he was succeeded in the village by his classmate, Dr. George Robert Reay. In 1904 Dr. Crandall took his degree of Doctor of Medicine at the university and subsequently carried on postgraduate study in ophthalmology in Chicago. From 1905 to 1908 he practiced medicine in St. Paul Park, Washington County, and from 1908 to 1918 in Fairfax, Renville County, Minnesota. In the latter year he served as first lieutenant in the Medical Corps of the United States Army. In 1919 he settled in Madison, Lac Qui Parle County, where he has continued to engage in general practice.

Another **Dr. Crandall,** it has been said, was in Houston County, perhaps in the western townships, prior to Dr. A. M. Crandall's residence in the county, but direct evidence of his presence has not been discovered. It is probable that this practitioner was Dr. J. C. Crandall who, in 1880, was stationed at Witoka, some miles north in Winona County.

Cassius B. Cranson was a native of Michigan, born probably between 1845 and 1850, since it has been said that he served as a bugler during the Civil War, presumably as a youth, and that he enjoyed recounting his experiences in the army. Like many another physician of his period, he did not possess a medical degree when he began practice, but no doubt he had received training under a preceptor and later he studied at the Hahnemann Medical Collge of Chicago, from which he was graduated in 1885. In the same year, resident in the village of Sheldon, he was certificated in Houston County and practiced under state license No. 1022 (H), which was issued on March 30. From 1887 to 1891, four years, he was coroner of Houston County. After a few years in Sheldon he moved to the larger village of Houston, where for a year he was in partnership with Dr. De Costa Rhines. In the early nineties he moved to Montana and ultimately to California.

Herbert D. B. Dustin, an eclectic physician, came to Caledonia, a village of seven general stores, three drug stores, four hotels, thirteen saloons, six churches, and two newspapers, to name only part of the enterprises, in the late seventies, and found there as contemporary practitioners of medicine Drs. W. H. McKenna, George Nye, W. W. Freeman and J. S. O'Connor, and probably Dr. F. Castle. Dr. Dustin had his office over Belden's Drug store. In 1882 he was county coroner and also county physician; as the latter officer he optimistically agreed to furnish remedies and appliances for $250 a year.

Gustave Erdmann, of the regular school of medicine, is said to have received his medical degree in Germany. In about 1881 he arrived in the village of Houston, where he engaged in the practice of medicine until some time in 1885, when he moved to Milwaukee. Dr. Edwin M. Sheldon, also a regular practitioner (listed at that time as an allopathist), was in Houston in the same period of the community's steady growth.

Robert Y. Ferguson, born on a farm near Hensall, Ontario, Canada, on October 11, 1871, was the son of Robert and Elizabeth Hood Ferguson, both of whom were natives of Scotland. There were four other children, Martha, Agnes, Margaret and Marion, of whom, in 1941, none was living.

Robert Ferguson obtained his early education in the country school near his

home and in the high school at Clinton, Ontario; in the interval between high school and medical college he taught in rural schools. In June, 1896, he was graduated, the honor student in his class, from the Detroit College of Medicine. A year later, having learned that Houston County, Minnesota, offered opportunity for a physician, Dr. Ferguson, accompanied by his young wife, Ella Guild Ferguson, of English and Scotch descent and a native of Exeter, Ontario, arrived in the village of Caledonia, where he at once entered into a widespread medical and surgical practice. His work, heavy from the beginning, soon was increased when, on Dr. Edmund B. Johnston's removal from Caledonia to Fairmont, Dr. Ferguson took over his considerable practice.

In Caledonia an early resident has recalled that Dr. Ferguson was held in high esteem, that he won confidence, that "he wanted everything just right," and that, a lover of dogs, he had in those years three which followed him so faithfully that he was known as "the doctor with the three dogs." In notes from Mrs. Ferguson, some of which have been used elsewhere in this paper, appears the following sentence, which is of interest in relation to her husband's practice and which also gives a highlight on the hazardous conditions of roads and weather that were encountered by all physicians of the community: ". . . There was nothing more of much importance outside of general practice during his stay in Caledonia, except escaping snowslides coming down from the bluffs in spring, or plowing through water in the valleys nearly up to our buggy box, with three dogs swimming hard to keep up with us, when I would accompany the Doctor on his calls." And again, with regard to a point of practice: "He always wore a heavy raincoat when taking care of contagious diseases and removed it on the back porch before entering his home. Such were the precautions taken in the early days."

Late in 1899 there came to Caledonia Dr. William E. Browning, brother-in-law of Dr. Ferguson, to enter practice, and for a time the two men were associated. Within 1900, however, Dr. Ferguson, having decided on a larger place as a permanent field of work, moved with his family to Pontiac, Michigan, where for many years he continued his career as a successful and respected physician and surgeon, distinguished for his contributions to public health, to improvement of hospitals and to organized medicine and no less for his constructive work as a member of the city's board of education and in all civic projects. He was a member of county, district, state and national medical groups.

Dr. Robert Y. Ferguson died in Pontiac on March 20, 1934, from cardiac disease after a long period of failing health, survived by his wife and the two children, Dorothy Ferguson Kotlin, of Royal Oak, Michigan, and Robert Gould Ferguson, of Pontiac.

(To be continued in the November issue)

President's Letter

The councilors of the State Association held their third quarterly meeting in Saint Paul on September 9. It is noteworthy that so many past presidents of the association and various chairmen of important committees, as well as Dr. A. J. Chesley of the State Board of Health, were able, despite the multiplicity of duties, to be in attendance.

A very noteworthy contribution to the meeting was a discussion on the postwar status of the Veterans Bureau hospitals and facilities. One report came from the head of the Veterans Bureau hospital in Minneapolis, Colonel Bank, and it is well for you to know something about the situation that confronts our state in the matter of giving medical care to the veterans, of what we may now call all preceding wars. It was stated that from previous wars there is an aggregation of 118,000 veterans, and from this last war, a potential veteran patient group of 300,000. This foots up to an impressive total of 418,000. Colonel Bank gave the conditions under which veterans are entitled to treatment either under out-patient or in-patient service; also, the restrictions governing the determination of whether the disability arose "in line of duty," and the veteran's degree of indigency, since all veterans, regardless of the source of their disability, are given full service provided they state they are unable to pay for it.

By stretching as far as possible the present veterans' hospital bed capacity at Minneapolis, something over 808 beds may be made available. In addition, the out-patient clinic is said to be devoted largely to the physical examinations providing a basis or rating for pensions, etc. To accommodate the impending flood of veteran patients, it is planned to provide a downtown Minneapolis office, which will add something like 120 beds to the hospital space, but it will call for the whole-time service of fifteen doctors from the Facility and thirty-five additional doctors to staff this branch. Some five other branches are in the process of development requiring at least one hundred additional physicians. The big question that presents itself is this: Where are they to be found? It is suggested that the stipends or salaries and the Civil Service protection accorded the doctors in the Veterans Bureau may induce more and more men in the Service to voluntarily enter it. Opposed to this, however, is the obvious circumstance that every questionnaire answered by the men in Service, together with the pressing need for more civilian doctors, negate the suggestion that many men of the calibre everyone agrees should be available for veterans' care, will volunteer. There is the hint that if necessary, doctors already in the military service will simply take orders, then the bureau hospitals will enjoy the unenviable distinction of having a shanghaied medical staff.

It was further commented upon that one of the most pressing needs for medical care of the returning veteran concerns the relatively large group (estimated at least a half) needing attention for so-called psychoneuroses. Doctors suitably trained for that service are in even greater demand among the civilian population, and so the problem mounts. Furthermore, the veterans' bureau hospitals that have been built, it is agreed, were never intended to be used as "short-stay" active hospitals, but rather to give domiciliary care for chronic illnesses, including tuberculosis, insanity, and severe permanent crippling disabilities arising from wounds such as injuries to the back or spine. The recent report of the conference held at Hershey, Pennsylvania, summoned to consider the treatment of the psychoneuroses among the veterans, makes it very plain that this large group should be treated as closely as possible to their own homes; that internment in "long-stay" hospitals only exaggerates their disabilities and prolongs their incompetence.

With all this in mind, the councilors were very gratified with the preliminary report from Dr. A. W. Adson concerning the possibility that Washington may enact further legislation, through some liberal insurance plan, whereby the Government will pay the premium for the veteran as long as he lives; and that he may seek whatever treatment he needs through the regular civilian doctor and hospital of his own choice. The most lamentable feature dealing with any such plan is that offhand (at this preliminary stage) it sounds altogether too reasonable, too humane, and too economical to ever be put into action. However, let us all hope—and let us help.

E. L. Tuohy

President, Minnesota State Medical Association.

Editorial

CARL B. DRAKE, M.D., *Editor;* GEORGE EARL, M.D., HENRY L. ULRICH, M.D., *Associate Editors*

TWO PROPOSED MINNESOTA CANCER SOCIETY PROJECTS

THE Minnesota Cancer Society, Inc., wishes to have any of its activities in this field of medicine completely approved and supervised by the medical profession. They have many willing workers in their Field Army and they collect many thousands of dollars annually, primarily for the purpose of educating the layman and providing refresher courses for the medical profession on the subject of cancer.

They are now anxious to have the medical profession approve and supervise two projects intended to further aid in the early detection of cancer through promotion of periodic medical examinations of apparently healthy women. This is hoped to be accomplished through free cancer detection clinics financed by the cancer society and rigidly controlled by the medical profession. Much misunderstanding now in existence among medical men throughout the state concerning the proposed cancer detection clinics can be cleared up by a careful review of the following rules and regulations of the clinics.

The second project is intended to reach thousands of women throughout the state through the mail, encouraging periodic examinations either by themselves or preferably by a physician. Rules and regulations of this enterprise will be found below. Both projects are to be voted upon by the council of the Minnesota State Medical Association.

It is the opinion of some physicians that the medical profession will have an opportunity to show its good will through extending their services to the people of Minnesota by approving and directing these two projects.

ARTHUR H. WELLS, M.D.
Chairman of Cancer Committee

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CANCER DETECTION CLINICS
of
The Minnesota Cancer Society, Inc.
Under the Supervision of
The Minnesota State Medical Society

Rules and Regulations

1. *Purpose*—The purpose of the Cancer Detection Clinics is to provide periodic (semi-annual) examinations for apparently healthy women with a view to the early detection of neoplastic growths, particularly in the breast and uterus. In addition, the clinics will be conducted as an educational enterprise promoting periodic physical examinations and disseminating facts accepted by the medical profession concerning cancer.

2. *Regulation*—The Cancer Detection Clinics will be under the control of the Minnesota State Medical Association through its cancer committee. Before establishing a Cancer Detection Clinic at any location the local county medical societies' approval will be mandatory. The county medical society will be requested to set up a Cancer Detection Clinic committee or designate an already existing committee for the purpose, which will govern the local activities of the Cancer Detection Clinic. Any of the following rules or regulations may be altered to suit the local county medical society or its committee. Any revision of rules or procedures must be approved by the local medical groups. If in the minds of the state cancer committee or the local county medical society the purpose of the Cancer Detection Clinics is not being accomplished or for any other reason they may discontinue them in the state or county, respectively.

3. *Expenses*—All expenses will be met by the Minnesota Cancer Society, Inc.

4. *Location*—A clinic will be offered to each councilor district of the Minnesota State Medical Association for the local medical societies' acceptance or rejection. The office and examining rooms will be located in local hospitals or at some site acceptable to the local medical society.

5. *Examiners*—Qualified women physicians not local practitioners and acceptable to the state cancer committee and the local medical society will be obtained for the examinations. These women physicians will be given a refresher course on cancer of the uterus and breast at the University of Minnesota.

6. *Advertisement*—Women will be notified of the purposes and dates of the examination through local women's societies and local newspapers. Any such written notices will contain a phrase "under the supervision of (the appropriate) county medical society." Once examined by the clinic the patient will be notified by mail of appointments for subsequent semi-annual examinations.

7. *Patients.*—Apparently healthy women of different age groups and from various social classifications will be accepted without charge for the examination. Patients will not be accepted who are under treatment for cancer or for the obvious purpose of checking a local physician's or institution's recent physical examination. No woman will be accepted for the examination without first stating the name of her private physician or the charity hospital to which she must be referred. New patients may be accepted from time to time to fill the ranks of those who have discontinued coming to the clinic at the stated six-month intervals.

8. *Examination.*—A complete history and physical examination as related to the breast and uterus will be conducted. A superficial examination of the skin and mouth and questions related to general health will be included. If suspicious lesions are detected the patient

is orally told of the nature but not the extent of the abnormality and sent to her family physician for further diagnostic procedures and treatment. No treatment, x-ray examinations or biopsies will be performed at the clinic. In all instances where there are suspicious neoplastic lesions the family physician is to be promptly given a report of the findings of the clinic by phone and if requested a complete written report will be sent. The clinic must follow up all such cases by phone or mail at approximately monthly intervals until they have either refused or have visited the physician of their choice.

The records of the examination shall be kept by the physician in charge of the clinic as in private practice. They will not be available to the Women's Field Army or to any other person.

Statistics gathered by the examinations must be organized and published by the examining physicians in MINNESOTA MEDICINE.

Semi-annual Breast and Pelvic Examination Research Project Via Mail

Rules and Regulations of Project

1. *Purpose.*—The purpose of this research project is to collect the data from large numbers of women above the age of thirty scattered throughout the state of Minnesota concerning the presence or development of tumors in their breast and uterus. It is dependent upon a semi-annual examination by the patient herself or a physician. In addition, it is an educational enterprise promoting periodic examinations and disseminating facts accepted by the medical profession concerning cancer.

2. *Regulation.*—This research project is to be under the control of the cancer committee of the Minnesota State Medical Association. Any alterations or new rules which they wish to make concerning the project including a discontinuation of the project will be accepted by the Minnesota Cancer Society, Inc. If any county medical society should object to the program being conducted in their county or district it will be either altered to their complete satisfaction or discontinued in that locality.

3. *Expenses.*—All expenses will be met by the Minnesota Cancer Society, Inc.

4. *Location.*—The letters and blank forms will be mailed out from the central office of the Minnesota Cancer Society and will be mailed back to the same office to Dr. William A. O'Brien. The returned form will be the property of Dr. William A. O'Brien and its later disposition and usage for publication under his personal charge.

5. *Printed Matter.*—The letter mailed out to women throughout the state will contain the attached three articles: A return addressed envelope, a letter of explanation, and the blank form to be filled out by the woman receiving the letter. A fourth article to be included in the letter will be a pamphlet published by The American Society for The Control of Cancer, Inc., 350 Madison Avenue, New York City, entitled "Important Facts for Women About Tumors." These articles may be altered somewhat from time to time but if there is any important change in principle it must be approved by the cancer committee of the state medical association. Each blank form sent out will have a number on it which will identify the individual to which it is sent. If the form is not returned a second form will be mailed out within the next three months. Any publications resulting from this research project shall be published in MINNESOTA MEDICINE.

CANCER RESEARCH PROJECT
The Minnesota Cancer Society, Inc.
In Association With
The Minnesota State Medical Society

(Date)

Dear (Miss) (Mrs.) ——————————:

As a member of the Minnesota Cancer Society you can play a very important part in an extensive research project which we are conducting. By helping us with this project, you will at the same time be protecting yourself against cancer. Your part is very simple but absolutely necessary for the success of this great effort to fight cancer through learning more about it.

A high percentage of cancer in women occurs in the breast or uterus (womb). This research project will be semi-annual examination and report on these two sites of cancer. You may perform the tests yourself or you may have a physician do the examination. We want to know the results, and we will send you a reminder and a form to fill out each six months.

You will accomplish an important means of protecting your life and your Minnesota Cancer Society will have accurate data as to the success of their fight against cancer. Do not procrastinate!

Fill out the enclosed form today or have your physician fill it out. Then mail it to us in the enclosed envelope. The simple instructions for the examination are on the reverse side of the form. You need not sign your name.

Sincerely yours,
WILLIAM A. O'BRIEN, M.D.

Case No.:

RESEARCH PROJECT
Semi-Annual Breast and Pelvic Examination
Minnesota Cancer Society, Inc., and
Minnesota State Medical Society
Lowry Medical Arts Bldg.
St. Paul, Minnesota
(answer yes or no where possible)

My age is ———— years.
My weight is ———— lbs. Recent loss of weight ———?
My general strength is good —— fair —— poor ——
Recent loss of strength ——————————.

Breast

Right breast:
Soft throughout ——————————
Lumpy ——————————
One hard mass ——————————
Nipple drainage ——————Kind———
Left breast:
Soft throughout ——————————
Lumpy ——————————
One hard mass ——————————
Nipple drainage ——————Kind———

Uterus

Menstrual History:
Usual time interval between onset of periods———days.
Recent change ——————————
Any unusual bleeding ——————————
Menopause (cessation of menses)——months—years—
Recurrence of bleeding (after menopause)————
Sensation of weight in pelvis (lower abdomen)————
Did a physician examine your breasts and womb?——
Was surgery performed? ——————————
Was cancer present? ——————————
Did our cancer education program result in your visiting the doctor? ——————————

Breast Examination

The proper manner of examining your breast is to use the flat of your hand. Press the breast against the chest with a rotary motion carefully examining all parts of each breast. If there is any question about a small mass or lump, see your doctor immediately.

HOSPITAL NEEDS

THERE is a shortage in everything connected with hospitals except patients. Although the fighting is over, the adjustment of medical care to a peacetime basis will be a slow process.

Care of the sick and wounded has depleted the professional personnel of hospitals in general, and manpower shortage has greatly depleted their nonprofessional help. Various factors including easy money and hospital insurance have resulted in the crowding of hospital space.

A campaign to call attention to the needs of civilian hospitals was instituted September 1 by the Office of War Information, the American Hospital Association, the National Nursing Council for War Service, the United States Public Health Service, and the American Red Cross, in which radio and newspaper publicity will be utilized on a nationwide scale.

The seriousness of the hospital situation is not fully appreciated. As a result of a recent survey by the American Hospital Association, it has been found that 23 per cent of the hospitals in the country have closed beds due to personnel shortage; there is an acute nursing shortage in 65 per cent of the hospitals; there is need for an average of fourteen more nurses' aides per hospital; 52 per cent of hospitals report an acute shortage of non-nursing personnel with an estimated need for some 90,000 throughout the country. Some 45,000 volunteers are needed right now to relieve the shortage in non-nursing personnel.

Shortage of hospital space in civilian hospitals is not a recent development. The end of the war has not relieved the situation which is likely to exist for some time. We again call the attention of the profession to the need for limiting their requests for hospital beds for those patients who actually require hospital care.

CHIROPRACTOR BILL IN MASSACHUSETTS VETOED

CHIROPRACTORS have never been licensed in Massachusetts. A determined effort was made during the last session of the Massachusetts legislature to pass a bill licensing chiropractors and to set up a separate board of chiropractic to be presided over by chiropractors, which would pass on qualifications.

The bill was finally passed by the House and Senate after extended hearings only to be vetoed by Governor Tobin on July 20 on the grounds that "it would establish new and different standards of education and qualifications for applicants seeking to practice in a field in which minimum standards are already established by statute. Thus it would introduce into the statutory system a double standard for the selection of practitioners in the field of medicine."

Strangely enough, it was the medical profession and not the legislators who received most of the criticism because of the passage of the bill. It was felt in some quarters that the doctors were not as active and persuasive as their opponents. In other words, that the medical profession is responsible for blocking legislation detrimental to the public interests.

Undoubtedly, the various components of our citizenship have the responsibility to some extent of supplying information to legislators. Experience shows undeniably that the medical profession has to do more than simply supply information to legislators—we have to educate the public in medical matters and do so continuously if legislation in the best interests of the public is to be accomplished.

If the chiropractor bill had been enacted in Massachusetts, the state would doubtless have been forced to institute a Basic Science Board in order to exclude this group of poorly trained individuals from practice. Legalizing chiropractic supervised by a separate Board would have led to the licensing of other medical cults.

If we in Minnesota had been more active in the early days, chiropractic might have been excluded from Minnesota. The mere official licensing of a group of poorly trained medical cultists give them a certain official approval which fogs the judgment of the uninformed public.

POSTGRADUATE MEDICAL COURSES FOR PHYSICIANS RETURNING FROM SERVICE

University of Minnesota announces a special program of courses for physicians returning to civilian life, after having served in the Armed Forces. Tuition will be paid by United States Government and the necessary books will also be provided. Every GI (enlisted man or officer) is entitled to at least one academic year of training. Single men are given $50 a month for maintenance, and married men $75 a month while in school.

Students may live at the Center for Continuation Study on the campus. Housing for families may be a problem. Classes will be held in the Center, and at the Medical School; University of Minnesota Hospitals; Minneapolis General Hospital; Ancker Hospital, St. Paul; and affiliated institutions.

Program

1. General Review Courses

Continuation courses in Medicine and the medical specialties (12 weeks), and Surgery and the surgical specialties (12 weeks). Lectures, demonstrations, conferences, and clinics. The faculty of the Medical and Graduate Schools in Minneapolis and St. Paul will be augmented by representatives from the Mayo Foundation for Medical Education and Research, Rochester, and by leaders from other medical centers.

Courses are arranged for general practitioners and specialists who have been practicing administrative medicine, and who now plan to return to clinical medicine.

Program will occupy the full time of the student. Returning veterans may register on any Monday when the program is in operation and continue until the series is completed. There will be one week intermission between the medical and surgical series.

The Kellogg Foundation, Battle Creek, Michigan, has made a special grant to the University of Minnesota to increase the number of full-and part-time faculty men to care for the increased enrollment, and Ancker Hospital, St. Paul, has been added to the regular teaching facilities for these courses. Register at the Center for Continuation Study on a special blank which will be forwarded on request. Prerequisites: graduate of approved medical school, completion of at least one year of internship, membership in county medical society.

2. Basic Medical Sciences Courses

Certification by one of the American Specialty Boards is the goal of all who plan to limit their practice. Each board requires the applicant to pursue special studies in the basic pre-medical sciences of anatomy, pathology, bacteriology, physiology, bio-chemistry, pharmacology, and others.

Veterans may register in courses in the pre-clinical departments to complete the requirements for the board for which they hope to qualify. In addition they will participate in the instructional program of the clinical department concerned, but they will not have patient responsibility or be required to assist in the operating room. At least two quarters of this program are recommended unless it can be completed in one. Register at the Center for Continuation Study. A special blank will be forwarded upon request. Prerequisite: Kellogg Courses, or exemption by petition.

3. Medical Fellowships

The Graduate School offers opportunities for study and research in the Medical School, Minneapolis, and in the Mayo Foundation for Medical Education and Research, Rochester. The Degree of Doctor of Medicine and a year of internship are prerequisites for admission. These fellowships pay a small stipend during the period of training which may be collected by the veteran in addition to other sources of income (governmental). Upon satisfactory completion of all requirements, a Master of Science or Doctor of Philosophy Degree is granted by the Graduate School. The number of years for each program varies with the departmental requirement and the progress of the student. Register as a Graduate Student in the Graduate School with teaching appointment as medical fellow. Prerequisite: Arranged in each case.

4. Clinical Residencies

To meet the demand for additional opportunities for advanced training, assistantships and residencies will be available in a number of hospitals and under recognized preceptors. These opportunities will be open to those who have completed the General Review Courses, basic medical sciences training, or other advanced training. Applicants for fellowships, residencies, and assistantships are considered when these places are open, so there is no advantage in having an advanced application on file. Register in the Graduate School with or without a teaching appointment as a medical fellow. Prerequisite: Arranged in each case.

5. Internships

Medical officers whose education was interrupted after one year or less of internship should consider the possibility of a senior internship as an ideal way of continuing medical education and then proceed from there.

6. Minnesota State Medical Association Placement Bureau

Executive Secretary, R. R. Rosell, 493 Lowry Medical Arts Building, Saint Paul, Minnesota, has lists of locum tenens and assistantships with practitioners. Time spent as an assistant to a qualified specialist counts toward board recognition. In addition the Minnesota State Medical Association Office has a file of opportunities for those who wish to start private practice, purchase a practice, or secure a position.

7. Other Opportunities

Physicians desiring further information or in need of different courses are invited to write about their problems to

William A. O'Brien, M.D.,
Director Department Postgraduate Medical Education,
University of Minnesota Hospitals,
Minneapolis 14, Minnesota.

Courses will probably start January 1, 1946, or sooner if the demand increases.

* * *

State Medical Association Questionnaire

Supplementing the Postgraduate Medical Education Program offered by the University, a special Postwar Planning Committee on Veterans Affairs, appointed by the Council of the Minnesota State Medical Association, is preparing a questionnaire to be sent out immediately from the state office to all civilian physicians in the state to determine:

1. How many locum tenens opportunities under a general practitioner will be immediately available to returning medical officers?
2. How many diplomates will offer assistantships to a returning medical officer who is interested in a specialty?
3. How many physicians are looking for an associate on a permanent basis; on a temporary basis?
4. How many physicians are contemplating retirement, if a medical practitioner can be found to take over their practice?

This information will be invaluable in helping the returning medical officer to become re-established in a manner that will be most adaptable to his particular needs.

AMA Information Bulletin

In addition, the Bureau of Information of the AMA has issued a pamphlet entitled "Information Bulletin for Medical Officers," which gives a concise statement of facilities now available for returning medical officers. This pamphlet is designated to help them with their problems of licensure, further education and location in practice. It may be obtained by writing the Bureau of Information, American Medical Association, 535 No. Dearborn Street, Chicago 10, Illinois.

MALPRACTICE AND THE STAFF PHYSICIAN

There has long been a need for some authoritative work on malpractice as it affects the medical and dental professions. The number of malpractice suits brought annually should be a warning to the men in practice that their earnings and their professional rep-

utations are in jeopardy. When action is commenced or threatened, your insurance company should be notified immediately. Where resort is had to a competent lawyer whose training in the legal principles involved in every malpractice case may avert serious consequences, "An ounce of prevention is worth a pound of cure." This maxim has special application to malpractice and yet, how can the professional man prevent the calamity of a malpractice suit if he is in no manner informed of the principles which govern his conduct in the treatment of his patients? There are certain well defined principles which every physician and surgeon should not only know, but feel. They should become part of his equipment for the work of his profession. He should realize fully that with his privileges he assumes certain duties. He should understand what these duties are and he should ever have them in mind as he goes about his daily work.

There is no better way to avoid mistakes and errors than to know of the mistakes and errors which have caused other members of the profession trouble and expense. There has been marked advancement in medical and surgical knowledge from the crude methods of the barber and the apothecary to the modern methods in which learning replaces ignorance and science supersedes superstition. Your insurance companies have also kept pace with these modern developments and in reality are your silent partners. It is their duty to recognize changing attitudes toward social problems which have brought with them new legal concepts and decisions and a corresponding need for knowledge of the doctor's position as well as his rights and responsibilities.

In giving thought to this subject, it should be borne in mind that under our constitution, questions of fact in civil cases are usually tried to a jury. The jury in the very nature of things is composed of men untrained in scientific knowledge. It would be impracticable even if it were desirable to have a jury composed of professional men. This fact, in itself, should impress one with the necessity of exercising such a degree of care as will appeal to the layman as being reasonable. It should be understood in this connection that jurors are not allowed to say, from their knowledge or lack of it, whether certain conduct is reasonable or not. Jurors can only act on evidence. They are presumed to know nothing of the case and unless in malpractice cases the plaintiff introduces some evidence (usually it must be expert evidence) to show that the treatment complained of was not proper, the court will not allow the jury to pass on the case no matter how unfortunate may be the result of the treatment.

This will explain the rulings in many cases in which judgment of the lower court is reversed because the evidence is held insufficient to present a case for the jury to decide.

The burden of proof is always upon the plaintiff to establish negligence or want of skill, and negligence or want of skill must be established by the preponderance or greater weight of evidence; but if the plaintiff produces any substantial evidence of negligence, then it becomes the duty of the jury to weigh the evidence and pass on the credibility of the witness.

The rules of law governing these cases are not statutory nor local. They are principles of common law and applicable and enforceable in every state in the Union. There should be no misunderstanding as to the hospitals' position in cases of this nature. While the hospital is usually absolved from liability for the carelessness or malpractice of its medical staff, the physician does not enjoy such immunity. The doctrine which makes the master responsible for the wrongful acts of its servants does not govern the relationship between the hospital and the physician; the physician alone is responsible for his negligent conduct. One of the duties of the governing body of the hospital is to see that proper professional standards are maintained. They have an obligation to the community for the appointment of a competent medical staff. The governing body therefore must select and appoint a medical staff to accept the responsibility for the treatment of patients admitted to the hospital. It is essential for the governing body of the hospital to comply with the minimum standards of the American College of Surgeons with reference to the restriction of staff membership if the institution is to be accredited by the College. The governing body may refuse to permit physicians professing certain systems of medicine to practice in the hospital.

Without question, the hospital may exclude persons not possessed of an M.D. degree from treating hospital patients; only registered physicians and qualified registered nurses may be permitted to supervise the work done within the institution. Osteopaths, chiropractors may be bept out; even those who possess a medical degree need not be permitted to practice in the hospital if they are of questionable ability and uncertain ethics.

While standards of practice should originate with the medical or professional departments, the limitations, control and execution must be in the hands of the governing board. Staff restrictions for the purpose of raising the standard of medical care and to accommodate a given hospital's facilities or to carry out its dedication to a special field of service, unquestionably are proper and lawful. The hospital may dismiss those guilty of important infractions against the ethical conduct of medical practice, for offensive attitudes toward patients, the public and professional colleagues as well as for incompatibility with the purpose for the fulfillment of which the hospital is responsible to the public.

Don C. Hawkins, Executive Assistant
St. Paul Mercury Indemnity Co.
St. Paul Fire and Marine Insurance Company

Prolonged malnutrition is a much more serious medical problem than famine, because it leads to diseases of low resistance, the chief of which is tuberculosis, and to conditions which may take several generations to remedy.—Lord Horder, J.A.M.A., May 6, 1944.

MEDICAL ECONOMICS

Edited by the Committee on Medical Economics
of the
Minnesota State Medical Association
George Earl, M.D., Chairman

VETERAN REHABILITATION PROGRAM CLOSELY ALLIED WITH CIVILIAN PRACTITIONER

The important rôle of the medical profession in any program of veteran rehabilitation is the gist of an editorial appearing in the *Wisconsin Medical Journal* for September, 1945, by Leo B. Levenick, director of the Veterans Recognition Board in the Wisconsin Department of Veterans Affairs.

Colonel Levenick knows whereof he speaks for he is a veteran with twenty-four and one-half years military service, with overseas service in two wars. He speaks out plainly about the changing order that has supplanted a bonus or gratuity for military service by legislative acknowledgment on the part of federal and state government that long-term rehabilitation is the obligation of the "defended to the defenders."

Restoration, in so far as possible, to pre-service health is fundamental, he declares, and the returning World War II veterans who have so gallantly represented us on at least seventy-five fronts in this global war, offer a tremendous challenge to the best the medical profession affords. The demands on the practitioner will not be confined to his skills in healing procedures but will also draw heavily on his revered function as a personal counselor, he believes.

Most practitioners, the editorial points out, will agree on the necessity for establishment of uniform practices in the medical economics phase of such a program of veteran rehabilitation. A large portion of the fees will be paid from public funds, and it would seem that standards established for other special groups might well be studied with a view to their application to veterans receiving treatment and care is the opinion of Colonel Levenick.

Another point underscored is the importance to the veteran of complete clinical records by his personal physician. The residuals of injury or disease incurred in or aggravated by service may appear at some future time and the veteran's entitlement to federal pension or other benefits may depend upon the accuracy and detail of his personal physician's case record. In case of death, the amount of benefit accruing to the veteran's surviving dependents may likewise depend on the medical and clinical records.

Colonel Levenick holds the opinion, which seems to be shaping up as the deliberate judgment of Army and Navy officials, that as the returning veterans become integrated again into civilian life, civilian practitioners in their home communities will find themselves increasingly important as instrumentalities for rendering both counselor and medical services to veterans and their families.

Insurance System Proposed for Veteran's Medical Care

A plan for abandoning the present system of veterans' hospitals and substituting an insurance system providing veterans with medical and hospital care in their home communities is under consideration by the senate military affairs committee.

The proposal was worked out by Colonel W. Paul Holbrook, of the Army Air Corps. Colonel Holbrook has reported to the committee that it is the opinion of many persons in the medical profession, that with civilian medical care restored, there will not be enough qualified doctors and surgeons in the country to staff a new chain of veterans' hospitals under plans now being contemplated.

Colonel Holbrook has proposed the government maintain only a certain number of hospitals where highly specialized care can be given to

veterans in need of it. For all others, he suggests that the government provide a medical care and hospitalization insurance policy up to a stated value. This would enable a veteran needing ordinary care and attention to go to a hospital or a physician in his own community or in some nearby city if he preferred.

If the local physician felt the veteran required more specialized attention, he would then be admitted to one of the proposed veterans hospital centers.

REALISM IN PUBLIC RELATIONS

Now that we begin the postwar period and we leave the turmoil of war for the adjustment to peace, what will be the direction of the changing order of things? In the course of events to come, medicine must shape its programs with care and give voice to its opinions.

There is an increasing awareness on the part of men of medicine that respect, confidence and loyalty on the part of an informed public is its greatest ally in preserving the integrity of the great institution of medicine and maintaining high standards of medical care.

Since most of the public relations problems of the medical profession seem to be linked with medical economics, the profession everywhere is devoting much of its time to a consideration of this subject.

Michigan Scores With Its Program

It has been clearly demonstrated in Michigan that if the profession takes the initiative, it will meet headon and render ineffective the highly articulate campaign of proponents of state medicine.

In a paper read before a conference of County Medical Society Secretaries of the State of Pennsylvania last January, Dr. L. Fernald Foster, Secretary of the Michigan State Medical Society, gives a graphic account of what has taken place in that state to bring realism into its public relations program.

We quote from a portion of that address, as it was published in the February, 1945, issue of the *Pennsylvania Medical Journal.*

"Some means of making it easier for the average person to pay for the doctor's services seemed a desirable thing, and so we in Michigan set out to study it. We sent representatives to England to examine the system in use there and we made numerous other analyses and investigations. The culmination was the launching in March, 1940, of our own State Society sponsored prepayment plan.

"It seems to me that inauguration of this program has had more to do with influencing the profession's public relations in Michigan than anything else in recent history.

Objectives Must Be Based Upon Known Facts

". . . To be sound, objectives must be based upon known facts. So far as our public relations were concerned, we did not have enough facts. We had started a medical care plan and the plan had achieved a substantial degree of public acceptance.

"But, after all, were we simply trying to stem an irresistible tide? The various national surveys had shown repeatedly that a heavy majority of the people—almost an overwhelming majority—were in favor of compulsory, state-controlled health insurance. How did we know that they were not merely accepting our plan as a temporary substitute to be abandoned in favor of a state program as soon as possible? Maybe we were deluding ourselves. Maybe we were gratuitously undertaking a job that nobody really wanted us to undertake.

Survey of Public Opinion Undertaken

"The Health Council (a public relations organization set up two years ago representative of the State Medical Society, State Hospital Association and other organizations concerned with human health) set out to try to get the answers, to ascertain the state of public opinion regarding the medical profession, the hospitals, and the prepayment plans. The general research bureau of one of the nation's largest advertising firms was hired for the purpose of conducting a wholly objective survey according to the best scientific principles. I believe that our profession everywhere can take pride and renewed hope from the survey's results.

Results of Survey Gratifying

"Reduced to the simplest terms, the survey told us a few fundamental and extremely significant facts. First of all, it brought us an overwhelming vote of confidence from the public. Second, it outlined those practices within the profession to which the public most commonly takes exception. Third, it told us that the people are looking not to the government, but to us, to take the initiative in matters of health care. Fourth, it informed us that, if we do take the initiative in a constructive sense, government medicine won't stand a chance.

"It is my conviction that this 'directive' from the people has greater and more permanent validity than any emanating from Washington. We know in advance that we have the people with us. All that we need to do is go ahead along the lines indicated.

". . . To determine the general public attitude toward the medical profession as a whole, the question was asked: 'If you were advising your son or another young man on a career and he were qualified and

interested, would you advise him to go into the medical profession?' Eighty-one per cent of the people thought enough of the medical profession to recommend it as offering a good career to their own sons. Even more direct was the question: 'What is your opinion of the doctors of medicine? As a group do you think they are doing a good job for the public?' Nearly 92 per cent of the people offered an outright 'yes' in answer to this question.

"As an indication of some of the complaints voiced by the persons interviewed, 28 per cent said that they did not believe doctors of medicine are as honest as they should be in all dealings with patients, 20.5 per cent felt that they had to pay too much for the doctor's services, and various percentages protested certain other practices ond conditions.

Significant Findings

"Public sentiment as it affects prepayment plans under various auspices was brought out through a series of questions. The survey showed that 79 per cent of the people who are eligible to obtain prepayment service through their places of employment actually have enrolled for this service. Surely this is an indication of the extent of the demand. Nearly a third of the people said that the availability of a prepayment plan would be a deciding factor in their choice between two jobs.

"In answer to the question 'Do you think we should have some sort of a government-operated medical-hospital plan?' 39 per cent of the people of Michigan voted 'yes' and 43 per cent voted 'no', with 18.5 per cent undecided. This is a decided variation from the aforementioned national surveys which showed heavy majorities of the people favoring a governmental plan. In other words, the deviation from the national trend substantiates our belief that the rapid growth of the voluntary program in Michigan indeed has had a beneficial effect. It seems to me that this is a very significant point.

"Finally, for the most conclusive findings of all, there were the responses to the question asking the people what type of program they would prefer if they had a choice. Thirty-four per cent voted for voluntary, professionally sponsored prepayment plans. This was more than twice the percentage which voted for any other type of prepayment. Government-controlled prepayment, for example, drew a vote of only 15.5 per cent when the people were allowed to choose. Regular insurance drew a 13.4 per cent vote. The vote for union-controlled prepayment was less than 1 per cent; 10 per cent of the people were undecided; and slightly more than a quarter of the people (26.6 per cent preferred simply to pay for care at the time rendered.

"As one of the final questions, the survey asked whether the people would advise their sons to go into the medical profession if it were under government control. As against the 81 per cent vote for medicine as the profession is today, there was only a 45 per cent vote for medicine as a career should it become subject to governmental control.

Our Profession Must Become More Vocal

"One additional survey finding seems pertinent. This was the evidence that less than 25 per cent of the people of Michigan had ever heard of a medical service plan sponsored by the profession. If we had flattered ourselves that we were doing a good job in informing the people about our own medical care plan, that report deflated our impression. Moreover, it supported our growing feeling that our profession is going to have to become more vocal. Many of the subscribers enrolled in Michigan Medical Service actually do not know that this nonprofit program for their protection was organized and is sponsored by the doctors themselves. If they do not know this—if they do not appreciate this and the other activities voluntarily undertaken by the profession in their behalf—how can we expect them to support us when we say that government medicine is not necessary because we voluntarily have developed methods for serving the same ends?

"It seems to me that many of us have sensed these things. We cannot pick up the newspapers and read articles casting discredit upon the medical profession without knowing that we have a public relations problem. We cannot help but notice the dearth of articles crediting the profession for its positive accomplishments. We cannot help but notice that most of the furor has arisen about economic, distributional, and organizational questions. We cannot help but compare the well-organized and highly articulate campaign of proponents of state medicine with the relatively unorganized and inarticulate activities of the free American medical profession. And if we believe in democracy—if we believe that the people will make the right choice if they have the information enabling them to choose intelligently—we must know that we are going to have to do a great deal more to get information about our profession to the public.

We Know the Demand

". . . I think it is true that further surveys are not necessary to tell us what our broad policies should be. I think that most of us now know what has happened to the American scene to require constructive adaptation by doctors collectively and individually. We don't need science to reiterate these things; our own eyes and ears tell us the same story. For a dozen years the people have been seduced with promises of Utopia on a gold platter. These promises would have received scant attention if there had not been need for the adjustment of certain social and economic inequities. There was, for example, no demand for prepayment plans forty years ago; today we know that this demand is very strong.

"For generations the American medical man has been able to immerse himself in the scienitfic aspects of his profession. Everything he has done, all the policies and practices he has established, have been developed in the light of that one all-absorbing purpose.

New Responsibilities

"Now we find that, more or less suddenly, we are suffering the intrusions of other interests. Naturally,

we do not like this distraction. We would give a great deal to be allowed to continue as we have in the past. It seems perfectly clear that we are not going to be allowed to do so. The handwriting is on the wall in large and bold characters. Either we accept new responsibilities, and accept them at a time when we are hard pressed to meet even the more urgent of the demands of our time, or we are going to have the freedom which made American medicine great taken entirely away from us.

Promise of Progress in Public Relations Seen

". . . Recapitulating, I believe that our profession is now confronted with the promise of progress in public relations comparable to our past progress in scientific practice. We are beginning to know the things that we should do to serve the best interests of the free medical profession and of the public, and we are finding that the interests of the two are practically identical.

"Our survey has told us in Michigan to continue our support of Michigan Medical Service, to extend the service, as rapidly as possible to as many people as possible, and to make the service as comprehensive as is practical. It has encouraged us in our co-operative effort to tackle some of the unsolved problems of health care in conjunction with the hospitals and our allied professions. It has advised us to tell the story of our profession not only by radio programs but by other means as well.

". . . I suppose that after all, the problem of public relations is the problem of human relations. . . . Like good health, good human relationships cannot be maintained by a passive attitude but can result only from constructive works. I am convinced that we in the medical profession must work fast, for there is much work to be done, but I am heartened by the evidence throughout the nation that that is exactly what we are starting out to do."

MINNESOTA STATE BOARD OF MEDICAL EXAMINERS

Julian F. Dubois, M.D., Secretary

Minneapolis Man Sentenced for Theft of Cocaine

Re State of Minnesota vs. Dutton Ray Miller

On May 4, 1945, Dutton Ray Miller, twenty-four years of age, 1609 Linden Avenue North, Minneapolis, was sentenced by the Hon. William A. Anderson, Judge of the District Court, Hennepin County, to a term of not to exceed five years in a state penal institution. Judge Anderson provided in his order that after the defendant had served ten months in the Minneapolis Workhouse, that he be released and placed on probation for four years. However, it has been learned that Judge Anderson ordered the defendant released from the Minneapolis Workhouse on August 23, 1945, and he is now at liberty in Minneapolis.

Miller was arrested on March 11, 1945, following the theft by him of four bottles containing six fluid ounces of cocaine hydrochloride, one bottle of cocaine hydrochloride crystals, a syringe and hypodermic needles from Abbott Hospital, Minneapolis. At the time he was sentenced, Miller told the Court that he had served two years in the United States Army and received a bad conduct discharge; that he acquired the narcotic drug habit while under shell fire in North Africa and Italy. Miller has a criminal record dating back to 1933, when he was adjudged a dependent child in the Juvenile Court in Minneapolis, and since that time has been arrested on over twenty occasions, mostly for trivial offenses. However, in April, 1941, Miller was sentenced at Ivanhoe, Minnesota, to a term of two years in the State Reformatory for burglary in the third degree.

Miller is 5 feet 10¼ inches in height, weighs 149 pounds, has blond curly hair and blue eyes. He has no particular occupation but has done work as a painter and a laborer. He is unmarried. Members of the medical profession should not, under any circumstances, dispense, administer or prescribe any of the derivatives of opium to this defendant. If any such request is made, the matter should be immediately reported to either the Minnesota State Board of Medical Examiners, the Federal Bureau of Narcotics at Minneapolis or the Probation Officer for Hennepin County.

Minneapolis "Detoxification Experts" Plead Guilty to Illegal Practice of Healing

Re State of Minnesota vs. John P. LeMay
Re State of Minnesota vs. Florence LeMay

On September 11, 1945, "Dr." John P. LeMay, also known as "Rev." John P. LeMay, thirty-five years of age, who holds no license to practice any form of healing in the State of Minnesota, and his mother, Mrs. Florence LeMay, fifty-eight years of age, also minus a medical license, entered pleas of guilty in the District Court of Hennepin County, to an information charging each of them with practicing healing without a basic science certificate. LeMay and his mother were arrested by Minneapolis Police officers on July 3, 1945, following a joint investigation by the Minneapolis Police Department and the Minnesota State Board of Medical Examiners into the activities of both defendants. A twenty-three-year-old Minneapolis stenographer had reported to the Medical Board that she had paid LeMay $89.50 between September 29, 1944, and April 26, 1945, for so-called "detoxification" treatments which consisted of an enema lasting about an hour. The patient also stated that she received two kinds of medical pills from LeMay. LeMay's undoing resulted from his attempting to prescribe a diet for the patient. The patient upon receiving the diet list, showed it to her grocer, and he suggested that she see a reputable physician. The matter was then referred to the Minnesota State Board of Medical Examiners, resulting in the arrest of both LeMay and his mother by Deputy Inspector Eugene Bernath and Detective Eugene Dougherty of the Minneapolis Police Department. Prior to the imposition of sentence, a letter was furnished to the Court stating that Mrs. LeMay had suffered a stroke of apoplexy in June, 1945, and had a blood pressure of 220/136. An appeal was made for probation because of Mrs. LeMay's health and the necessity of her son's supporting her. After a thorough discussion of the matter with the County Attorney's office of Hennepin County and a representative of the Minnesota State Board of Medical Examiners, Judge E. A. Montgomery sentenced each defendant to a term of one year in the Minneapolis Workhouse and stayed the execution of sentence for one year with both defendants being placed on probation, on condition that they refrain from practicing healing in Minnesota in any manner and abide by all of the laws of the State.

At the time of the arrest of these defendants at Suite No. 416 Medical Block, 608 Nicollet Avenue, Minneapolis, it was discovered that LeMay had on display, in his office, the license to practice medicine and

the basic science certificate formerly held by a Minneapolis physician who died in January, 1944. The patient in the instant case made inquiry for this physician and was treated by John P. LeMay in the belief that he was the licensed physician whose license was on display. The medical license and basic science certificate were seized, along with medical instruments and records, by the Minneapolis Police Department. Shortly after LeMay's arrest, he caused a sign to be placed on the same suite announcing that he was running a Christian Health Center and listing himself under the name of "Rev. John P. LeMay, Director." This sign was immediately removed when called to the attention of the authorities. LeMay was arrested twice previously in Minneapolis, once in 1937, and again in 1942, on moral charges, and was sentenced to the Workhouse on each occasion. LeMay stated that he was born in Duluth and studied for eight months in a Minneapolis Chiropractic College where he claims to have received a certificate in physiotherapy, after paying a fee of $80.00. LeMay has worked in several places as a masseur, and his mother was formerly employed as secretary by the Minneapolis physician whose license was found on display in "Dr." LeMay's office.

A licensed physician, with whom LeMay was associated at the time of his arrest, has been cited to appear before the Minnesota State Board of Medical Examiners to show cause why his license should not be suspended or revoked for aiding and abetting the LeMays to practice medicine illegally. The Minnesota State Board of Medical Examiners wishes to acknowledge the splendid co-operation received in this case as well as in several other cases, from Chief of Police Ed. Ryan, Inspector Mullen, Deputy Inspector Bernath and Detective Dougherty, all of the Minneapolis Police Department.

Federal Court Revokes Probation of Minneapolis Drug Addict

Re United States of America vs. Helen Geneva Rudd

On July 9, 1945, the Hon. Gunnar H. Nordbye, United States District Judge, at Minneapolis, revoked the probation previously granted to Mrs. Helen Geneva Rudd, forty-six years of age, 5156 Nokomis Avenue, Minneapolis. Judge Nordbye ordered Mrs. Rudd committed for three years in a penal type institution and the defendant has been taken to the Federal Woman's Reformatory at Alderson, West Virginia, to serve her sentence.

Mrs. Rudd is well known to the medical profession of Minneapolis under many aliases. She was released on March 24, 1945, from the United States Hospital at Lexington, Kentucky, for narcotic addicts. Seven days later she was attempting to get morphine and dilaudid from a Minneapolis physician. She assumed the name of "Mrs. Bernice Johnson" and posed as a nurse. Several Minneapolis physicians were victimized by her misrepresentations. Mrs. Rudd has a long criminal record and a twenty-year history of drug addiction. On September 27, 1934, Mrs. Rudd pleaded guilty in the United States District Court at Minneapolis to an indictment charging her with a violation of the Harrison Narcotic law and was given a suspended sentence of eighteen months in a Federal penal institution. The sentence was suspended and the defendant placed on probation for a period of two years. Mrs. Rudd violated her probation and on May 1, 1936, was committed to the Federal Woman's Reformatory at Alderson, West Virginia. On July 7, 1938, Mrs. Rudd was again arrested in Minneapolis and charged with violating the Minnesota Uniform Narcotic law. She attempted to plead guilty, but the Court would not accept the plea for the reason that the defendant stated she did not remember her conversation with the physician from whom she obtained the morphine. The case proceeded to trial and the jury returned a verdict of not guilty. On January 14, 1943, Mrs. Rudd was again arrested by officers of the Federal Bureau of Narcotics, entering a plea of guilty on March 2, 1943, in the United States District Court at Minneapolis, to an indictment charging her with four separate violations of the Harrison Narcotic law. All four violations consisted of forging medical prescriptions for narcotic drugs. On April 2, 1943, the defendant was placed on probation for a period of three years upon the express condition that she be taken to the Government Hospital at Lexington, Kentucky, for treatment for drug addiction. It was for a violation of this probation that Judge Nordbye again ordered the defendant incarcerated in a penal type institution.

The facts concerning this case indicate extreme carelessness by certain members of the medical profession in the furnishing of narcotic drugs to Mrs. Rudd. The Minnesota State Board of Medical Examiners has previously warned the medical profession, through an article in MINNESOTA MEDICINE (November, 1938) to refrain from administering, dispensing or prescribing any narcotic drugs of any kind for this woman. There can be little excuse for a physician dispensing or prescribing any derivatives of opium to Mrs. Rudd. She is an addict of many years' standing and the exercise of ordinary caution would preclude any physician from prescribing for her. The following is an extract from the admonition previously published by the Medical Board concerning Mrs. Rudd:

"The State Board of Medical Examiners urges every physician to refrain from administering, furnishing or prescribing morphine for this woman. If a call is made for a physician, he should insist on a complete examination, including X-ray, and hospitalization, if necessary, before any narcotic is given."

If that admonition had been followed, Mrs. Rudd could not have obtained any of the derivatives of opium. A physician should be immediately upon his guard the moment any patient suggests that a derivative of opium, whether it be morphine, dilaudid or any other narcotic preparation, is the only medication that will relieve the patient. Drug addicts, without exception, always indicate the type of medication desired by them. There has been much criticism of the medical profession by the Federal Bureau of Narcotics, and others, for laxity in the dispensing and prescribing of the various derivatives of opium. Much of the criticism is well founded. Unless there is an improvement in this regard, it will be necessary for the Minnesota State Board of Medical Examiners to institute disciplinary proceedings by way of suspension or revocation of the medical license of those physicians involved.

MORE ABOUT RH

Dr. Philip Levine, one of the original researchers of the Rh factor, points out in the *Journal of the American Medical Association* (July 28) that erythroblastosis fetalis is almost twice as common among women with Rh negative blood who sometime during their lives have had a blood transfusion. He states, "Obviously, the transfusions induced an immunized state of the antibody producing cells so that many years later with the very first pregnancy there already was sufficient intrauterine blood destruction to produce fatal forms of erythroblastosis fetalis."

Then he adds, *"These findings support the recommendation that no transfusion be given to young women, girls or even female infants unless tests for Rh are carried out. All those found to be Rh negative must receive Rh negative blood."*

For some women who never had a blood transfusion in their lives but whose first baby had erythroblastosis fetalis, Dr. Levine states, "The possibility that the immunization in these women may have been initiated many years previously by the common practice of administering blood intramuscularly, particularly to the newborn." This procedure was formerly used to combat the hemorrhagic disease of the newborn. Since the introduction of vitamin K, however, this practice has been discontinued.—*Briefs,* October, 1945.

Minneapolis Surgical Society

Meeting of April 5, 1945

The President, Daniel MacDonald, M.D., in the Chair

THROMBOEMBOLISM

GEZA DE TAKATS, M.D.
Chicago, Illinois

The recent interest in thromboembolic phenomena, in their prevention and treatment, arises from several sources. First it has become obvious that thrombi, especially in the lower leg and foot, are frequent and that they impressively contribute to the morbidity and mortality of medical and surgical diseases. This is worthy of emphasis, since ten to fifteen years ago the general attitude of the surgical clinics was that of minimizing or deprecating any effort directed toward prevention or therapy of thrombosis. It hardly ever seemed to occur and if a patient did die of thromboembolism this was considered to be a rare, unpredictable and unpreventable event. Today the profession has become embolism-conscious even though it is highly debatable whether the incidence of thrombosis has really increased in the last few decades. It is certainly true that we are treating a much older and a more handicapped group of patients than were cared for in former years, and this in itself may be responsible for the seeming rise in the incidence of thrombosis.

But unquestionably our methods of diagnosis have improved. Payr in 1930 in a short, classic article stressed the importance of the pressure-points on the sole of the foot denoting plantar-vein thrombosis. Homans is responsible for the valuable dorsiflexion sign which has done so much to facilitate the early diagnosis of the thromboses of the lower leg. Phlebography with its attendant pitfalls and some drawbacks gives information in the doubtful case, but is certainly unnecessary in the majority of patients. The possibilities of venous-pressure measurements and determination of circulation times have not been sufficiently explored. The best method is still a close inspection and palpation of the suspected limb, preferably in the sitting position with feet hanging over the edge of the bed. Slight cyanosis, edema, and filling of the superficial veins of the foot may be more obvious than in the horizontal position. Also the calf may be more tense and warmer than its fellow without any actual change in measurements. For those who claim that some thrombi may be entirely latent and yet be emboligenic one might say that about 50 per cent of the adult population harbors thrombi in the calves of the leg and certainly most of these patients never throw emboli.

The third cause of increased interest and discussion in this field stems from the advocacy of different forms of treatment which are pushed with considerable vigor by their proponents. It is interesting to note, however, that all of these measures are finally relegated to a place which fits them and where they remain as part of our armamentarium. Thus it is my impression that vein division, sympathetic block, and anticoagulant therapy all have their indications, but there is no reason to ignore one for the benefit of another. They should support instead of excluding each other.

From the Department of Surgery, University of Illinois College of Medicine, and the Fourth Surgical Service, St. Luke's Hospital, Chicago.

Prevention of Thrombosis

There is no need to belabor the point that slowing of venous circulation favors thrombosis. With few exceptions most surgeons will advocate breathing exercises, flexion and extension of the knee and ankle. The Trendelenburg position has been routine with us for many years and the typical Fowler position is discouraged. It is also obvious that if patients are allowed to get out of bed one or two days after operation, their circulatory status improves. It must be emphasized, however, that this retardation of blood flow is *never* the actual exciting cause of thrombosis. There are plenty of ambulatory patients with deep venous thrombosis; there are patients developing postoperative thrombosis who were out of bed the day after operation. The slowing of circulation operates most conspicuously as a localizing agent of thrombosis to points of venous contriction such as occur in the foot, at the ankle, at the upper edge of the soleus muscle, and at the inguinal ligament. However, blood may remain fluid between two ligatures if they are carefully placed so as to avoid endothelial damage. Auricular stasis in a fibrillating auricle may persist for years without producing thrombosis. Venous stasis, then, is a factor but certainly not the sole factor in the production of a blood clot.

Endothelial injury, a break in the smooth lining of the intima is an accepted cause of thrombosis. Mechanical, thermal or electric injuries of blood vessels are followed by thrombi, usually localized to the site of injury. An ankle sprain, a blunt soft-tissue injury may be the starting point, however, of a spreading type of thrombosis or one that is emboligenic. Infections may affect the vascular lining; especially notable for their affinity to the vascular endothelium are typhoid fever, virus pneumonia and malaria. Attention should also be called to the curious allergic response of the blood vessels which operate in panarteritis nodosa and very probably in the migrating attacks of phlebitis and arteritis of Buerger's disease. The sulfanilamides and the state of serum sickness may elicit such vascular hypersensitivity.

Prophylaxis against such a mechanism in our daily surgical practice is obviously impractical at present. Attention should be called, however, to the fact that

surgical trauma may represent a sensitizing factor in bringing about thrombosis; a simple venipuncture in patients suffering from acute thromboangiitis obliterans may bring about a long segmental thrombus. For the same reason patients suffering from an active stage of Buerger's disease or a migrating phlebitis should not be subjected to sympathectomy or amputation until the process becomes quiescent.

The third factor in the production of thrombosis is the increased tendency to blood clotting. This state may be present as a result of dehydration, plasma-loss, increased cell count, all of which raise the hematocrit; it seems to be present in the active stage of Buerger's disease, after many infections, in digitalis poisoning, but more importantly for the surgeon in the postoperative state. Owing to the destruction of platelets and the trauma to tissue, so much thrombokinase is liberated that platelets agglutinate and the process of thrombosis is initiated.

The fact that every major operation creates a clotting tendency is not sufficiently appreciated or is still ignored. True enough, a determination of a bleeding time or coagulation time is not sensitive enough to demonstrate it. There are, however, two tests which are capable of showing the effect of a major surgical operation on the clotting mechanism; the prothrombin level and the test for heparin tolerance.

Prothrombi times are now available in most hospital laboratories but their accuracy leaves much to be desired. Great confusion exists because of the numerous modifications of the original method of Quick; new batches of thromboplastin have to be made up and tested against normal controls. At present our laboratory is using the Quick prothrombin time on 12.5 per cent plasma, that is in plasma diluted eight times. With this method one cannot only detect a hypo- but also a hyperprothrombinemia. However, the end-point is difficult to read and the interpretation of shorter than normal prothrombin times is unclear. The levels must be watched daily by the resident staff; the same technician must run the tests in order that they can be relied upon.

From the foregoing it seems as if this important laboratory test is not quite ready to aid the general surgeon. One looks forward to a simplification and standardization of the method.

The heparin tolerance has been developed with the idea that its simplicity will make it more available to the average laboratory worker. It is based on the observation that the response of patients to heparin varies in the individual patient. A small test dose of heparin (one cubic centimeter, containing 10 milligrams) is injected intravenously. Coagulation times determined with a capillary tube are obtained before and ten, twenty and thirty minutes after the injection. The normal response to heparin is somewhat like 3.5, 5, 6, 3.5 minutes, and each individual seems to maintain his own tolerance curve taken day after day. While venous coagulation times show an identical trend, they require four venipunctures in thirty minutes, where the capillary coagulation times are taken from a finger-prick and are quite satisfactory. The patient who for some reason has an increased clotting tendency shows a diminished or absent response to heparin. The coagulation times remain at the initial level or rise very little.

Table I illustrates the factors which have been so far investigated in regard to their influence on the response to heparin.

TABLE I. FACTORS INFLUENCING THE RESPONSE TO HEPARIN

Decreased Sensitivity	*Increased Sensitivity*
Postoperative state[1]	Sulfur compounds (sodium tetrathionate, sodium thiosulfate sulfanilamides?)
Acute thrombosis[2]	Prostigmine (or other parasympathetic stimulants)
Buerger's disease (acute phase)	Dicoumarol[3]
Polycythemia	Digitalis (small doses)
Severe burn, sudden dehydration	Hepatic damage
Acute hemorrhage	
Severe trauma	
Adrenal stimulation	
Anxiety? Fear?	
Digitalis (toxic doses)	
Carcinomatosis	

[1] Three to four days after a major operation.
[2] In any part of the vascular tree
[3] Walker, J. and Rhoads, J. E.: Surgery 15:859, (May) 1944.
Unless otherwise stated, the observations are our own.

Our present practice is to determine the tolerance to heparin of the following group of surgical patients: (1) in those who give a history of previous thromboses; (2) in those who have developed a thrombosis and are to be placed on anticoagulants; (3) in patients with Buerger's disease or polycythemia about to undergo an operation; (4) in fibrillating digitalized patients who have thrown emboli and are in danger of future showers. The flat tolerance curve indicates caution and the prophylactic use of anticoagulants. Another small but definite group show a drug allergy to heparin with an intense prolongation of the clotting time. Such patients cannot be given heparin intravenously.

If the flat heparin curve could pick out the group of patients who are in danger of postoperative thrombosis, they would be the ones requiring prophylactic anticoagulants. It will probably take one thousand patients before such a statement could be made with assurance.

The Early Diagnosis of Venous Thrombosis

It has been suggested that nurses or interns measure the circumference of the calves of bedridden patients daily. This seems hardly possible during the present shortage of help. Besides it presupposes that edema is the first symptom of muscle-vein thrombosis. Cramping of the calves, pain on dorsiflexion of the foot often precede edema. Objectively, a slight increase in skin temperature, increased pulses, increased oscillations, together with faint cyanosis and distention of dorsal veins when the foot is hung over the side of the bed may be present. The calf is tense not only because of accumulation of fluid but because there is protective muscle spasm of the calf muscles over the thrombosed veins not unlike a rectus rigidity over an inflamed viscus. It is my impression that tabulation of early signs and symptoms of lower leg thrombosis in the order of their frequency is not going to be as helpful as a steady awareness of the possibility of such complication and determined action following its recognition.

The use of phlebograms has been vastly overdone.

The visualized veins give an interesting pattern but the interpretation of the films is difficult. Our group has made use of this method for many years, only employing it when no other method seemed available for diagnosis. Phlebograms are often misleading and their routine use is not indicated.

The localization of thrombi is most important when a pulmonary embolus occurred as the first sign of thrombosis and when it would be desirable to know the source of the embolus. Such a situation is present in approximately 40 per cent of pulmonary emboli. If the lower legs give no indication of venous obstruction or protective muscular spasm, if the thigh and groin are not tender and swollen, one should not forget the pelvis and the right side of the heart as a possible location of the thrombous. In spite of all the recent interest in the ascending thromboses of the lower leg, the pelvis is a potent source of small, slightly infected thrombi around the uterus, bladder, prostate and rectum; when such a thrombus grows into the common iliac vein a large pulmonary embolus may occur with a secondary iliac thrombosis. Also the right heart is frequently the source of a pulmonary embolus in rheumatic fibrillation or following coronary occlusion.

The Early Treatment of Thrombosis in the Lower Extremities

The three methods of treatment, namely, sympathetic block, anticoagulants, and division of the vein proximal to the thrombus do not necessarily exclude or contraindicate each other's use. Each method has its place and the extreme advocates of each will gradually no doubt recognize their limitations.

Sympathetic Block.—When the thrombosed extremity is cold, cyanotic, and the pulses are weaker or absent because of a widespread vasospasm, the block gives dramatic help. The diffuse pain is relieved, the edema recedes, the leg becomes warm. A phlebogram shows much more extensive and wider venous channels after a block, indicating the release of *venospasm.* However, this syndrome is seen only when the iliofemoral segment is occluded, when there is a periphlebitis or lymphangitis around the thrombosed vein which maintains the vascular spasm. Such a periphlebitic exudate may organize into a heavy fibrous scar in the common vascular sheath of the femoral vessels and may maintain a painful edema for many months and years. In such patients repeated sympathetic blocks or stripping of the periphlebitic vein, which may have canalized, is of great benefit.

But it is not to be supposed that the usual lower-leg thrombosis, in which the leg is tense, but warm and well pulsating, would benefit from a sympathetic block. A bland, non-irritating thrombus which is often emboligenic does not receive any benefit from such a measure. Nor is there any reason to believe that a sympathetic block would protect the patient from an embolus; it may release the venospasm proximal to the clot.

Anticoagulants.—With the exception of localized, segmental thrombi in infected varicose veins, thrombosis is a systemic disturbance of the entire clotting mechanism. A surgeon would hesitate to operate on diabetics without the required amount of insulin; yet he is often unaware of the benefit of anticoagulants. Heparin can now be administered in intermittent intravenous doses, the average dose being 5 cubic centimeters every three to four hours. This type of administration need only be continued for two days, after which the effect of dicoumarol becomes manifest. This drug is started simultaneously with the first dose of heparin. Dicoumarol, as is generally known, cannot be administered unless daily determinations of prothrombin levels are available. Our patients' prothrombin levels are kept between 50 and 30 per cent of normal until they are completely mobilized. This takes the attention of a trained resident staff and is more conveniently done on a medical than a surgical service. Emboli or hemorrhages may occur during the administration of anticoagulants, but they are overwhelmingly due to faulty administration of the drug.

If the subcutaneous administration of heparin becomes available and will prove practical it will require a few capillary coagulation times for its control and will eliminate the "ticklish" administration of dicoumarol. However, to date, this is our most potent and reliable drug for continuous use.

When a patient who has recurrent attacks of thromboembolic phenomena leaves the hospital he can take restricted amounts of dicoumarol over many months. Such patients are taught to run their own coagulation times and have prothrombin levels preferably once a week. The average dose of this prophylactic administration which keeps the level around 80 per cent of normal is 200 milligrams twice a week.

Proximal Division of the Vein.—We have recognized a clear indication for this procedure under the following conditions:

1. When a leg is amputated at the level of the knee or above it, the vein is tied at the groin for the prevention of embolism. There has been so much difficulty in the elderly arteriosclerotic and diabetic patients with infarcts and emboli that this excellent suggestion of Veal's has been routinely followed. The patient is mobilized early and is not given anticoagulants.

2. When a patient has thrown a pulmonary embolus and the site of the thrombus is clearly below the knee in the deep veins.

3. When deep venous thrombosis of the lower leg is diagnosed and the thigh is not swollen nor is the course of the femoral vein tender on pressure.

With such indications there has been no subsequent embolus, no residual impairment of any degree. However, since subsequent recurrent thrombosis may occur in the collaterals of an extrimity whose main vein is tied, the patient's "thrombophilia," whether on an infectious or allergic basis, needs close attention.

Ligation of the common femoral or common iliac vein in patients exhibiting a typical milkleg or a periphle-

bitis of the iliac vein has not been done routinely. Anticoagulants and x-ray therapy are useful in this series. The danger of embolism is not greater than when ligation is done at a high level.

Ligation of the vena cava has also not been done in any of my cases, although a bilateral common iliac involvement with a preceding massive embolus might tempt one to do so.

The question might be asked: Since one is so conservative in the indications of vein ligation, why ligate the femoral vein at all. A prophylactic or therapeutic division of the femoral vein is such a simple procedure, done under local anesthesia, that it compares favorably with anticoagulant therapy; it also prevents the development of a persistent thrombophlebitic edema by limiting the thrombus to a level below the ligature. With the advent of simpler anticoagulant methods even this form of ligation may disappear.

The high divisions require general or spinal anesthesia; they are operations which, *per se*, carry a percentage of ligature thrombosis in patients who have already demonstrated their tendency to thrombus formation. Without anticoagulants such high ligations or divisions may well produce instead of prevent emboli.

High division of the iliac segment in the presence of chronic deep thrombophlebitic edema is especially dangerous; such patients may thrombose their patent collaterals as most forcibly demonstrated by a recent report of Dennis from the University of Minnesota. It must be remembered that occlusion of a vein above the profunda femoris invariably slows venous return. In fact I have reported case histories to show that femoral vein ligation in the presence of well-developed collaterals may predispose to later attacks of thrombosis. While the circulation time from ankle to tongue is not appreciably affected by division of the superficial femoral vein, it is roughly trebled after division of the common femoral or external iliac vein.

It is questionable that a preveinous inflammatory reaction around the femoral warrants a ligature above the visible level of periphlebitis, as recently expressed by Fine. The perivenous lymphangitis often extends high into the retroperitoneal space; it does not always signify thrombosis. One encounters these reactions in the late thrombophlebitic edemas, when attempting a sympathectomy. They are obviously unaffected by dividing the vein.

The Late Sequelae of Deep Venous Thrombosis

Recurrent Emboli.—Patients are encountered who exhibit pulmonary emboli many months or years after the initial attack. One patient, whose thrombosis originated following a hysterectomy, had five attacks of pulmonary infarction in the next eight years. The attacks were preceded each time by a recognizable activation of a thrombosis in the left calf. Such a patient should certainly have a division of the femoral vein, but even this will not prevent recurrent attacks of thrombosis. In another case such attacks were aborted by a short course of therapy with sulfadiazine. However, all possible foci of infection, especially in teeth and tonsils, should be eradicated, since clinical experience indicates that recurrent attacks are activated from such a source. That sensitization phenomena may play a part is to be investigated.

Frequently massive plaques of thrombophlebitic induration appear along the course of a phlebitic cord, which may spread in all directions and cause a great deal of pain and disability. After a short period of immobilization and hot foments, such patients receive a glycerin-gelatin cast which allows them to become ambulatory. When the acute process has subsided, iontophoresis with a 0.5 per cent mecholyl solution may soften the induration. Ulcerations which occur in the center of such phlebitic indurations may heal slowly but recur year after year. Excision of the induration, followed by a split-thickness skin graft has been very satisfactory. The graft must be protected for several months by gelatin-glycerin casts and later by elastic support. Should a renewed attack of edema occur, the graft may break down again.

Such late thrombophlebitic indurations constitute a real handicap for the patient; their prevention lies in the early treatment of deep venous thrombosis as outlined above. Sympathetic block, early low vein ligation, and anticoagulant therapy all militate against the development of permanent edema. Heparin in the early edemas not only inhibits the propagation of thrombi, but prevents the extensive clotting of plasma which clogs the lymphatics, sets up a connective-tissue reaction, and results in the hard, brawny indurations.

Another group of patients suffer less from persistent edema than from extensive collaterals which are unsightly, which frequently become thrombosed, and for which often ligations and injections are being done. The pattern of such collateral varices arising from an old deep venous occlusion is so characteristic that frequently a simple inspection will reveal their origin. Thus the perimalleolar varices coursing transversely are the result of a thrombosis of the posterior tibial vein; a large tense short saphenous, with multiple incompetent perforators in the posterior surface of the calf may indicate a popliteal thrombus; a tortuous prepatellar vein draining the anterior surface of the calf into the superficial femoral vein denoates a block of the anterior tibial vein; a lateral vein of the thigh connecting with a tense gluteal vein drains into the hypogastric system, shortcircuiting the common femoral vein. The lateral lumbar, or the suprapubic veins, indicate external iliac obstruction.

The question of the potency of the originally obstructed deep venous segment now presents itself. I have previously emphasized the syndrome of deep venous insufficiency following recanalization, and a group at Ann Arbor have felt that ligation of such an insufficient segment might be beneficial. From what has been said previously it appears that such a procedure would only increase the difficulty of venous return and would throw an added burden on the existing collateral circulation. It would seem more promising to ligate some of the collaterals if it can be demonstrated that the deep system is again adequate. This does not always mean

recanalization, since collaterals also develop in the deep channels. The crux of the problem is, then, whether or not the superficial collaterals have become superfluous and can be tied with impunity. To determine this, the Perthes test still remains invaluable; also phlebograms can here be applied with more safety than in the presence of acute thrombosis. If the patency of the deep venous system can be ascertained by a Perthes test or by phlebograms and there is evidence of marked reflux of blood due to valvular incompetence of the superficial system, ligations at the saphenofemoral junction or at the site of incompetent perforators can be undertaken. This may result in marked improvement of venous return. Injections, however, should never be undertaken simultaneously with the ligation, since a sudden massive obliteration of the collateral bed increases the edema or may activate a latent deep phlebitis. Injections can be slowly given over a period of time aided by continuous elastic support. Such patients require carefully individualized treatment and should not receive the routine high saphenous division followed by retrograde injection with a catheter.

Another group of patients complain of recurrent attacks of pain, of sciatic or femoral distribution with or without accompanying edema. Such extremities show a hyperesthesia and glossiness of the skin, vasomotor instability, and an osteoporosis, all of which suggest a state resembling or duplicating the causalgic state. When the ilio-femoral segment of such a patient is exposed, a hard, cement-like periphlebitic exudate is encountered. A remarkable improvement in the case of two patients was observed in 1937, in whom a venous stripping was done. Today one is more inclined to perform repeated sympathetic blocks which promptly relieve the pain and are also useful as a diagnostic test that autonomic reflex phenomena are at play.

Another type of postphlebitic neuralgia mostly of sciatic distribution is seen in thromboses of the hypogastric vein and its tributaries. Such painful sciaticas may be due to a thrombosis of the sciatic vein (and also the artery) which can be readily seen when patients of this type have to undergo amputation.

A not too infrequent cause of pain in phlebitic extremities is truly psychogenic. The fear of recurrent thromboembolism produces a true thrombophobia which is often aggravated after a visit to a doctor. It is amazing how simple reassurance and more adequate elastic support will help this type of patient; that this thrombophobia is usually superimposed on a truly organic lesion is obvious.

The last but most important complication of deep venous thromboses is the embolic phenomena to the heart and lungs. This has been discussed many times before and only the routine emergency treatment is given here, which has been impressively lifesaving on our service. The table is placed conspicuously on every surgical floor.

TABLE II. PULMONARY EMBOLISM

Recognition

Sudden onset of shock with rapid, weak pulse, restlessness, difficult, rapid breathing, sweating and pallor, pain in chest, fainting, collapse or unconsciousness. Apt to be in a patient who has phlebitis or is convalescing from an operation or delivery or is a known cardiac.

Emergency Treatment

By Nurse

1. Place in semi-sitting position.
2. Start oxygen by catheter or mask immediately. Tanks are on each floor.
3. Give 1/75 grain atropine sulfate, hypodermically, immediately.
4. Call intern.

By Intern

1. Give a second dose of 1/60 to 1/75 grain atropine sulfate intravenously (if previous injection of atropine has not caused flushing of face and dilation of pupil).
2. In any case give ½ grain papaverine hydrochloride intravenously.
3. Repeat atropine and papaverine three or four times a day.
4. Order portable chest film and electrocardiogram.

Note:

Morphine, adrenalin or digitalis may aggravate the condition. Above treatment is useful even if patient is suffering from some other condition such as coronary occlusion or a cerebral vascular accident.

Summary

Any effort to decrease the incidence of thromboembolic phenomena must be directed toward measures of prevention, methods of early diagnosis which must be simple and harmless, and finally, a properly timed treatment. Sympathetic block, anticoagulants, and division of veins all have their proper indications. Many disabling late sequelae can be averted by early, intensive therapy. Pulmonary embolism must also receive early management, directed against oxygen-want and autonomic reflex phenomena.

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Discussion

DR. H. O. MCPHEETERS: After hearing such a masterly discussion of this subject as Doctor de Takats has given us, my getting up here makes me feel like the student trying to criticize the professor, and I realize how incompetent I am to do it. I have never heard a more complete discussion on this subject. After my recent trip around the country and seeing men who are so radical in handling some of these things, I am happy to hear that Doctor de Takats is still conservative relative to the immediate and radical high femoral ligation.

The importance of the subject of thrombo-embolism and thrombophlebitis is clearly stated in an article by J. H. Gibbon, Jr., in the *Pennsylvania Medical Journal*, 42:877, (May) 1939. The presentation was on "Pulmonary Embolism: Review of Recent Contributions." In part he says:

"In a statistical consideration of this subject Gibbon was able to express the incidence of fatal pulmonary embolism as follows: Of every thousand patients admitted to the surgical wards, one will die of pulmonary embolism. Other investigators have found that of every seventeen to twenty patients with clinical manifestations of thrombophlebitis one will die of pulmonary embolism and one in every twelve who had a previous nonfatal embolism will die of a subsequent embolus. These figures demonstrate forcefully that the incidence and consequence of thrombo-embolic phenomena are of sufficient extent to deserve serious consideration."

To further emphasize the importance of pulmonary embolism I refer you to the article by O. S. Culp, in

the *Bulletin of the Johns Hopkins Hospital*, 67:1, 1940. He reports a series of eight, 163 urological operations in which eighty-eight pulmonary emboli developed. Thirty-two of these were fatal and so proved at autopsy. Of these fatal cases 20 per cent had shown pre-operative evidence of cardiac decompensation; 43.7 per cent were underweight; 62 per cent were in patients over sixty years of age; while only 41 per cent of all the patients in the series were over sixty years of age.

Hampton and Casselman report 370 cases of fatal pulmonary emboli, as proven by autopsy, with 60 per cent in medical cases and 40 per cent in surgical cases.

Doctor de Takats brought out the point that the real danger in these conditions is before the clear signs appear. That is, before you get the definite signs of the presence of the phlebitis. In the early stage the clot lies loose, while after the phlebitis has developed it has become fixed in large measure. Of course, it may propagate as a loose clot up the vein proximally. The time to make your diagnosis and to do the femoral ligation is with the early signs while it is thought we have a phlebothrombosis and not the phlebitis.

I believe there is a phlebothrombosis of the pelvic and hypogastric veins far more often than we think. At times this is the cause of sciatic neuritis pains. Local heat, hot sitz baths and hot douches help much. This is a common source of the obscure emboli we often see. Precordial pain in a convalescent patient is often diagnosed as due to a coronary attack, or the onset of atypical pneumonia, when in reality the pain is due to a pulmonary embolus.

The reflex spasm associated with and due to the onset of a phlebitis is often so severe that due to the associated arteriospasm we may actually have a thrombosis develop in a vessel and get a complete closure of same with a resultant gangrene.

Thrombophlebitic edema is supposed to be rich in protein. It is easily mobilized at first, but produces much fibrosis later, and this is permanent.

The use of phlebography in the diagnostic phase of this work and in helping to decide just when to ligate and when not to has many advocates. Personally, I use it but little. I prefer the clinical findings and examinations. The interpretation of the films is difficult and questionable; certainly not as clear and definite as some would lead you to believe.

I use the dicumerol in every case, but the prothrombin time must be closely watched. I prefer to speak of it in *per cent of normal*, and try to hold the level at about 25 per cent to 30 per cent.

I feel sure that the wave of enthusiasm for the immediate high femoral ligation for a mild phlebitis or rather a suspected phlebothrombosis in the calf has gone far too far. It will recede after a year or so, and then we will stand on solid ground. The disadvantages and objections to its too frequent use have not had their proper appreciation. It will come.

The greatest single advance that has been made in the treatment of phlebitis is the lumbar sympathetic block with novocain. When done early the results are very striking. Fine results are often even weeks after the onset. Doctor de Takats has emphasized this point. This should be practiced on the fresh cadaver at autopsy. It is simple and easily done if certain rules are followed.

DR. CYRUS HANSEN: I had hoped that Doctor de Takats would have elaborated a bit more about his experience with x-ray therapy in these conditions, as I know he has been associated with a considerable amount of work in this direction.

As I see it, x-ray is an adjunct to the other types of treatment and the benefit is chiefly the relief from pain and speeding of resolution of the inflammatory reaction associated with the phlebitis. I have seen a few patients with the migratory type of phlebitis and they seem to derive a great deal of benefit from small doses of x-ray in the acute stage.

With Doctor McPheeters we have seen a good many patients where the x-ray has been of considerable value as a pre-operative treatment of the low grade cellulitis frequently seen in the extremities. Here the treatment is directed to the infection and Doctor McPheeters says the results have been very gratifying.

The dosage used must be small, 75 volts to 150 volts at five to seven-day intervals, choosing the voltage and filtration to adequately penetrate all of the involved area.

DR. J. J. BOEHRER: I should like to ask Doctor de Takats two questions:

1. What information does his heparin tolerance test give him, as to the range of dosage of heparin which may be required?

2. It has been assumed that dicoumarol is equally efficacious with heparin in the treatment of these conditions, even though its mechanism of action is different and its effect upon the coagulation time is slight in therapeutic ranges of the drug. Would not heparin be preferable to dicoumarol were it not for its expense and inconvenience of administration?

Finally, there is a good deal of confusion regarding seconds and percentages in prothrombin time. Many men have the idea that there is a linear relationship between time and percentage in prothrombin time. In other words, they assume that if the prothrombin time in a patient is twice that of the control, that the patient's prothrombin time is 50 per cent of normal. This is not true. The proper way for prothrombin to be determined in percentage is for each hospital to make up its own prothrombin percentage curve, diluting plasma with normal saline to 90, 80, 70 per cent and so on, and measuring the prothrombin time for each of these percentage levels. This must be done for each new batch of thromboplastin.

DR. J. M. HAYES: I hesitate to discuss this very scholarly paper of Doctor de Takats. He has given an excellent scientific review of this subject. I did want an excuse to get back on this old familiar platform once more.

I have a slide made many years ago which shows the simplest approach to the splanchnic trunk from the posterior area.

This slide, as you see, was taken from a sketch in Labot's book. Labot came from Pouchet's Clinic in Paris. He was brought to the Mayo Clinic to teach us how to do block anesthesia. I was fortunate enough to be working with him when he started to write his book on block anesthesia.

For a time we used this posterior splanchnic block several times a day to give us anesthesia in the upper abdomen for gall bladder, common duct, and other upper abdominal operations. We made no attempt to get the ganglia, but injected the main splanchnic trunk. One only has to try a few injections on the cadaver or living body to discover that it is much more simple to inject the splanchnic trunk than the individual ganglia. There is practically no danger to this procedure if one observes two simple rules. First, avoid injecting into a blood vessel. Next, be sure to inject under the prevertebral fascia. If one uses a small calibre needle there is no great harm entering a blood vessel provided no solution is injected.

I had done many of these injections before I realized this had so marked an effect on the vascular system of the leg.

Ochsner and his associates first called attention to this in 1939. Soon after this I had a patient come

to my office with a marked phlebitis and a varicose ulcer about 1.5 inches in diameter. He had diabetes, hypertension and he weighed about 240 pounds. He had so much pain and discomfort he said he would have to quit his work unless I could do something for him. I did a posterior splanchnic injection on him in the office. While I was injecting him, he said the pain in the leg was letting up. I injected only about 2 c.c. of 1 per cent novocain. After waiting in the office an hour he went back to work, and continued to work without discomfort. About two weeks later the leg had returned to about normal size, the ulcer was rapidly healing and the patient was feeling fine. He had no further treatment for this except a few dressings on the ulcer. That was about five years ago. He was in the office recently to show me that his leg was practically normal and he has had no trouble with it since the injection.

This very unusual case has made me enthusiastic over the results of this treatment. I have injected many of them in the office since with quite uniformly good results.

In regard to tying off the vein, either femoral or iliac, above the thrombus in a thrombophlebitis we should be conservative. Not long ago I was called to tie off a vein in a patient who already had a pulmonary embolus. The patient appeared to be a bad risk. I wasn't sure but what I might break off the fatal embolus in doing this operation.

Kretschmer, who had come from Linser's Clinic in Germany some years ago, showed me their method of binding these legs with acute thrombophlebitis. He was the same man who gave us the inspiration to start injecting veins many years ago.

An elastic bandage is started on the foot at the base of the toes and wound rather tight to the knee. Just below the knee the cuff is made especially tight. Another bandage begins here and extends well up to the groin. Again a tight cuff is made just below the groin. The two most common sites of thrombus are in the calf of the leg and just below the groin. The cuff at each site is supposed to prevent emboli from escaping into the vein above. The elastic bandage also prevents swelling of the foot and leg.

I have used this on every acute phlebitis I have seen since and fortunately have not seen emboli escape after the bandage was put on, even where one or more emboli had escaped before application of the bandage.

If the patient's condition warranted it otherwise, he was allowed to get out of bed as soon as the bandages were applied.

We now apply the elastic bandages and do the posterior splanchnic in all these cases, as soon as the thrombophlebitis is recognized. The results are often very striking.

DR. GEZA DE TAKATS: I am very grateful for the discussion, gentlemen. I would like to thank Doctor McPheeters for his kind words. He brought out a few points I neglected to mention, and one is the syndrome of pelvic phlebitis. In two patients, who were sclerotic, one could actually see a thrombosis of the sciatic vein at amputation, which of course, is a branch of the hypogastric, and which might well be the cause of this severe sciatica which some of the patients have. I have looked for this, and when amputating a leg, we look for the sciatic artery and we always note the state of the sciatic vein. It is surprising how often they are thrombosed. Phlebegrams must be used with reserve and only if other methods of diagnosis fail.

Doctor Boehrer mentioned the confusion about the prothrombin time as expressed in seconds and in percentage of normal. When we first started out, prothrombin level was expressed in seconds. He is absolutely right that it should be calculated in percentage of normal and every hospital has to make up its own curve. It is also true that every time when the regular technician is not doing it, there is always a questionable result. There is nothing worse than to have to rely on faulty prothrombin time. The same technician should be used. This is the present difficulty of prothrombin levels generally used; the errors are too great.

Doctor McPheeters asked about penicillin and sulfa drugs in thrombophlebitis. Our results have been very discouraging. Patients who have bacterial endocarditis and are getting 240,000 units of penicillin every day with continuous heparin administration develop emboli and phlebitis under this therapy. It is interesting to note that penicillin increases heparin response, that is, the patient becomes more sensitive to heparin. Doctor Quick brought out the importance of the X factor in the blood. He pointed out that heparin is not an anticoagulant until it combines with albumin, and some drugs, digitalis perhaps, interfere with the heparin-albumin complex.

I am happy Doctor Hansen brought up x-ray therapy. We have used x-ray therapy in thrombophlebitis for many years. Our feeling is that if the patient has a large exudate around the vein, this will respond to x-ray. The question arises whether or not a thrombus would organize more rapidly under x-ray treatment. There is no question that edema goes down and pain is relieved. As Doctor Hansen said, use small doses. I have seen flare-ups and attacks of fever from as little as 125 roentgen units; 75 to 100 units with deep filter, repeated once a week, is our method of choice.

I am delighted to hear that Doctor Hayes is back in town. He brought up the method of splanchnic nerve injection. In 1925 I presented a collective review on the posterior approach to the splanchnic nerve. The lumbar method is a little simpler for me. I am afraid of getting into the vena cava. Outside of Doctor Hayes and a few other men, most men would not dare do splanchnic block in the office. We are forced to do diagnostic block in arterial disease on ambulatory patients, but we do them in the hospital and keep the patients there about one hour until their skin-temperature or walking ability improves. In general, it would be hazardous to regard this as office practice.

I haven't had time to discuss symptoms of early pulmonary embolism which often looks like coronary occlusion. Cardiologists feel that pulmonary types of cardiograms give you a typical curve which looks like a posterior wall infarct. Infarcts simulate pleurisy and pneumonia and myocardial damage. The elevation of the diaphragm in lower lobe infarcts needs mention. Roentgenologists can only describe a shadow, and you must interpret it in the light of clinical findings.

If subcutaneous heparin becomes available which is heparin dissolved in Pitkin's solution, you can give 300 mg. of heparin every second day and it will simply require coagulation time for control.

In regard to the use of the heparin curve: after the heparin curve has been established, we begin with a 50 mg. dose intravenously and note the time it takes for the coagulation time to return to normal. It may take two, three, or four hours, and after the patient has shown his ability to handle the 50 mg. of heparin, the same dose is repeated. It will not produce a continuous elevation of coagulation time, nor does the drip method do it. Heparin also inhibits adhesion of platelets which is an important action and we have no simple clinical method to determine it. In spite of the fact that we have no steady elevation of coagulation time, 5 c.c. of heparin every three hours has been very satisfactory and easier for the patient than with the continuous drip.

The meeting adjourned.

ERNEST R. ANDERSON, M.D.,
Recorder

Minnesota State Medical Association

House of Delegates

Saint Paul Session — May 19-20, 1945

Complying with a decision passed by the Council at a meeting held December 9, 1944, only a summary of the 1945 session of the House of Delegates appears for publication. Mimeographed copies of the complete transcript of the proceedings, which have just been received from the court reporter, will be sent to each of the delegates at an early date.

* * *

HOUSE OF DELEGATES
First Meeting, Saturday, May 19, 1945
Ramsey County Medical Society Auditorium
Saint Paul, Minnesota

The Ninety-second Annual Meeting of the Minnesota State Medical Association House of Delegates convened in the Ramsey County Medical Society Auditorium, Lowry Medical Arts Building, Saint Paul, Minnesota, Saturday, May 19, 1945, at 2:20 p.m. with Dr. W. W. Will of Bertha, Minnesota, Speaker of the House of Delegates, presiding.

Speaker Will called the meeting to order and called for a preliminary report from the Credentials Committee, Dr. A. J. Lewis of Henning, Minnesota, Chairman. Dr. Lewis reported that forty-three delegates were present constituting a quorum, and it was moved, seconded and carried that the report be accepted. It was also moved, seconded, and carried that the minutes of the previous meeting be accepted as printed without further reading, after which the Speaker called for the report of the chairman of the Council, Dr. W. L. Burnap of Fergus Falls.

A written report was read by Dr. Burnap following which he offered two resolutions commending the authors of the Enabling Act and other members in both houses of the Legislature for their splendid efforts in its behalf that resulted in its passage by an overwhelming majority. These resolutions were referred by the Chair to the Resolutions Committee.

Speaker Will then called for a report from the Committee on Finance, Dr. L. A. Buie of Rochester, chairman. This was followed by a report by Dr. Stephen H. Baxter, of Minneapolis, chairman of a special committee appointed by the Council to study the question of extending paid-up memberships to association members of long standing who have been in active practice over a long period of years. Dr. Baxter reported that a proposal of his committee, still in its preliminary stage, had been presented to the Council that morning but that no action had been taken.

Speaker Will then called for a report from the Reference Committee on Medical Education Reports, Dr. H. C. Habein of Rochester, chairman. Dr. Habein stated that the following reports had been considered by his committee:

Cancer—M. W. Alberts, M.D., of St. Paul, Chairman
Conservation of Hearing—Horace Newhart, M.D., of Minneapolis, Chairman
First Aid and Red Cross—J. S. Lundy, M.D., of Rochester, Chairman
Heart—F. J. Hirschboeck, M.D., of Duluth, Chairman
Hospitals and Medical Education—H. S. Diehl, M.D., of Minneapolis, Chairman
Public Health Nursing—Mario Fischer, M.D., of Duluth, Chairman
Syphilis and Social Diseases—P. A. O'Leary, M.D., of Rochester, Chairman
Tuberculosis—J. A. Myers, M.D., of Minneapolis, Chairman

Dr. Habein moved for the acceptance of these reports, the motion being duly seconded and carried.

At the request of Speaker Will, the report of the Reference Committee on Miscellaneous Scientific Reports was read by Dr. R. W. Morse, Chairman, reporting on the following committees:

Child Health—R. L. J. Kennedy, M.D., of Rochester, Chairman
Diabetes—J. R. Meade, M.D., of St. Paul, Chairman
Fractures—V. P. Hauser, M.D., of St. Paul, Chairman
Historical—M. C. Piper, M.D., of Rochester, Chairman
Industrial Health—A. E. Wilcox, M.D., of Minneapolis, Chairman
Interprofessional Relations—W. P. Gardner, M.D., of St. Paul, Chairman
Maternal Health—R. J. Moe, M.D., of Duluth, Chairman
Medical Testimony—E. M. Hammes, M.D., of St. Paul, Chairman
Military Affairs—J. J. Catlin, M.D., of Buffalo, Chairman
Nervous and Mental Diseases—J. C. McKinley, M.D., of Minneapolis, Chairman
Ophthalmology—T. R. Fritsche, M.D., of New Ulm, Chairman
Public Health Education—S. H. Baxter, M.D., of Minneapolis, Chairman
Radio—R. M. Burns, M.D., of St. Paul, Chairman

Further comments on the report of the Committee on Child Health were interposed at this point by Dr. R. L. J. Kennedy, on invitation from the Chair, followed by comments from Dr. Victor O. Wilson relative to the Emergency Maternity and Infant Care program in the state.

Upon motion made by Dr. Morse, the Miscellaneous Scientific Reports were duly accepted.

Speaker Will then called for a report from the Reference Committee on Officers and Council Reports, Dr. G. I. Badeaux of Brainerd, chairman. Dr. Badeaux reported that his committee had considered the following reports:

Secretary and Executive Secretary—B. B. Souster, M.D., of St. Paul; R. R. Rosell of Minneapolis
Treasurer—W. H. Condit, M.D., of Minneapolis
Chairman of the Council—W. L. Burnap, M.D., of Fergus Falls
Councilors:
First District—L. A. Buie, M.D., of Rochester
Second District—L. L. Sogge, M.D., of Windom
Third District—C. M. Johnson, M.D., of Dawson
Fourth District—A. E. Sohmer, M.D., of Mankato
Fifth District—E. M. Hammes, M.D., of St. Paul
Sixth District—A. E. Cardle, M.D., of Minneapolis
Seventh District—E. J. Simons, M.D., of Swanville
Eighth District—W. L. Burnap, M.D., of Fergus Falls
Ninth District—F. J. Elias, M.D., of Duluth

After acceptance of these reports, upon motion made by Dr. Badeaux, Speaker Will called for a report from the Reference Committee on Medical Economics Reports, Dr. Clarence Jacobson of Chisholm, chairman, who reported on the following committee reports:

Medical Economics—George Earl, M.D., of St. Paul, Chairman
Medical Ethics—R. D. Mussey, M.D., of Rochester, Chairman
Medical Advisory—W. H. Hengstler, M.D., of St. Paul, Chairman
Low Income and Indigent Problems—W. A. Coventry, M.D., of Duluth, Chairman
Sickness Insurance—A. W. Adson, M.D., of Rochester, Chairman
Industrial and Contract Practice—R. F. McGandy, M.D., of Minneapolis, Chairman
Editing and Publishing—E. M. Hammes, M.D., of St. Paul, Chairman
State Health Relations—T. H. Sweetser, M.D., of Minneapolis, Chairman
University Relations—E. M. Jones, M.D., of St. Paul, Chairman
Public Policy—L. L. Sogge, M.D., of Windom, Chairman

Supplementing the report submitted by the Editing and Publishing Committee, Dr. Hammes asked that the delegates urge Association members to submit scientific papers and interesting case reports for publication to Dr. C. B. Drake, Editor of MINNESOTA MEDICINE, to relieve the acute shortage of scientific material resulting from the cancellation of the Annual Meeting.

The Chair called for supplementary remarks from Dr. A. W. Adson, Chairman of the Committee on Sickness Insurance, in view of the significance of its recommendations relative to procedures to be taken by the House of Delegates following passage of the Enabling Act by the State Legislature. A lengthy discussion followed and it was voted to consider each of the recommendations separately.

The question of setting up a temporary Board of Directors to formulate plans for organizing a voluntary non-profit medical service corporation, in accordance with stipulations in the Enabling Act, was disposed of by voting that a caucus of the regular elected delegates to the House of Delegates from each councilor district, provided that no local caucus had been held previously in the respective councilor district, should select the two members to serve from their respective districts as members of a temporary Board of Directors, and that these directors, so elected, in turn, should select three directors at large, representing the specialties.

By a vote of the delegates, this temporary Board of Directors was empowered to take the preliminary steps necessary to the formulation of such a corporation, and it was also voted that the caucuses should be held sometime prior to the second session of the House of Delegates, and the first meeting of the Board of Directors should be held sometime prior to the adjournment of the final session of the House of Delegates.

Upon recommendation of the Chairman of this Committee, it was voted to change the name of the Committee on Sickness Insurance to the Committee on Medical Service.

Dr. Jacobson moved for the acceptance of the Medical Economics Reports, as amended, the motion being duly seconded and carried.

Whereupon the Saturday afternoon session was regularly adjourned, to be reconvened at 10:00 a.m., Sunday morning.

Second Meeting, Sunday, May 20, 1945
Ramsey County Medical Society Auditorium
Saint Paul, Minnesota

The second session of the House of Delegates was convened Sunday, May 20, 1945, at 10:00 a.m., Speaker W. W. Will presiding. Dr. A. J. Lewis, Chairman of the Credentials Committee, reported that a quorum was present.

Speaker Will called for a report from each of the Councilor Districts on the caucuses held since Saturday's session for the purpose of selecting members on the temporary Board of Directors for the formulation of a voluntary non-profit medical service corporation. The following names were received and duly elected by the House of Delegates:

1st District—H. Z. Giffin, M.D., of Rochester
C. B. McKaig, M.D., of Pine Island
2nd District—W. C. Chambers, M.D., of Blue Earth
C. L. Sherman, M.D., of Luverne
3rd District—B. J. Branton, M.D., of Willmar
W. W. Yaeger, M.D., of Marshall
4th District—R. N. Andrews, M.D., of Mankato
B. J. Gallagher, M.D., of Waseca
5th District—V. P. Hauser, M.D., of St. Paul
W. R. Humphrey, M.D., of Stillwater
6th District—R. R. Cranmer, M.D., of Minneapolis
M. M. Weaver, M.D., of Minneapolis
7th District—A. M. Watson, M.D., of Royalton
A. H. Zachman, M.D., of Melrose
8th District—W. L. Burnap, M.D., of Fergus Falls
J. F. Norman, M.D., of Crookston
9th District—B. S. Adams, M.D., of Hibbing
J. R. Manley, M.D., of Duluth

Following a suggestion from the Chair, Dr. Adson, as Chairman of the Committee on Medical Service (formerly Committee on Sickness Insurance) called a meeting of the newly elected directors for 1:45 that afternoon in the Ramsey County Medical Society Auditorium for the purpose of holding a preliminary meeting to organize.

Dr. Edward L. Tuohy of Duluth, President of the Minnesota State Medical Association, then addressed the delegates. He outlined the need for decisive, coherent

action in the next few months in the field of medical legislation and public relations and presented a proposal for a broad-gauge radio program embracing 17 states, including Minnesota, designed to dramatize the story of private medicine to the public. This idea, Dr. Tuohy said, originated with the Michigan State Medical Society following the excellent reception it had experienced with a similar program that had been developed locally.

Dr. Julian F. Dubois of Sauk Center then gave a report on the activities of the State Board of Medical Examiners, following which a request was made that he furnish a report for publication in MINNESOTA MEDICINE at a later date.

Dr. W. F. Braasch of Rochester, Chairman of the Minnesota Committee of the Procurement and Assignment Service, reported on the activities of his committee, following which, as a member of the Board of Trustees of the American Medical Association, he reported on the far-reaching program of the American Medical Association, particularly with reference to post-war planning.

Speaker Will then called for a report from Dr. E. J. Simons of Swanville, Chief of the Medical Unit of the Division of Social Welfare, on the work of his unit, after which the delegates heard a report from Dr. A. J. Chesley of St. Paul, Secretary of the Minnesota State Board of Health.

There being no further business, the meeting was adjourned at 12:20 o'clock to be reconvened at 2:15 p.m.

Third Meeting, Sunday, May 20, 1945
Ramsey County Medical Society Auditorium
Saint Paul, Minnesota

Speaker Will called the meeting to order, Sunday afternoon at 2:25 o'clock. Dr. A. J. Lewis reported that a quroum was present, after which Dr. F. J. Hirschboeck of Duluth was called upon to give the Necrology Report. The House of Delegates rose in silent tribute to the memory of the departed.

Speaker Will then asked for a report from the Chairman of the Resolutions Committee, and Dr. Hirschboeck presented separate resolutions commending the following agencies: (1) The authors of the Enabling Act in both houses of the Legislature and other members who had supported the Act: (2) Stations WCCO and WLB for gratuitously and liberally giving the Minnesota State Medical Association broadcasting time for the dissemination of medical information to the public; and (3) Officers and members of the Ramsey County Medical Society, Mr. Rosell and his staff, for extending their facilities and services for conducting the business sessions of the House of Delegates. These resolutions were duly accepted by the delegates.

Dr. W. L. Burnap then was called on to present the report of the luncheon session of the Council, which report was accepted.

Speaker Will declared that the next order of business was the election of officers of the Minnesota State Medical Association, and the following were unanimously elected:

President-elect: E. J. Simons of Duluth
First Vice President: Max Alberts of St. Paul
Second Vice President: W. C. Chambers of Blue Earth
Secretary: B. B. Souster of St. Paul (re-elected)
Treasurer: W. A. Condit of Minneapolis (re-elected)
Speaker of the House of Delegates: W. A. Coventry of Duluth
Vice Speaker of the House of Delegates: C. G. Sheppard of Hutchinson
Councilor, Fourth District: A. E. Sohmer of Mankato (re-elected)
Councilor, Sixth District: A. E. Cardle of Minneapolis (re-elected)
Councilor, Seventh District: W. W. Will of Bertha
Councilor, Eighth District: W. L. Burnap of Fergus Falls (re-elected)
Delegates to the American Medical Association: F. J. Savage of St. Paul (re-elected); E. W. Hansen of Minneapolis (re-elected)
Alternates: for F. J. Savage, George Earl of St. Paul (re-elected); for E. W. Hanson, W. W. Will of Bertha (re-elected).

It was then moved, seconded, and carried that the invitation extended by Dr. W. D. Brodie to hold the 1946 meeting in Saint Paul be accepted.

Upon motion by Dr. W. T. Weum, duly seconded and carried, the secretary was instructed to draw up a resolution to be sent to Speaker Will in appreciation of his excellent services as Speaker of the House of Delegates.

Whereupon, at one minute to three the Ninety-second Annual Meeting of the House of Delegates was adjourned.

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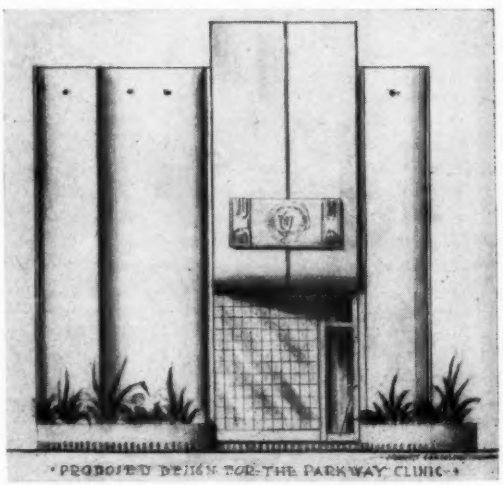

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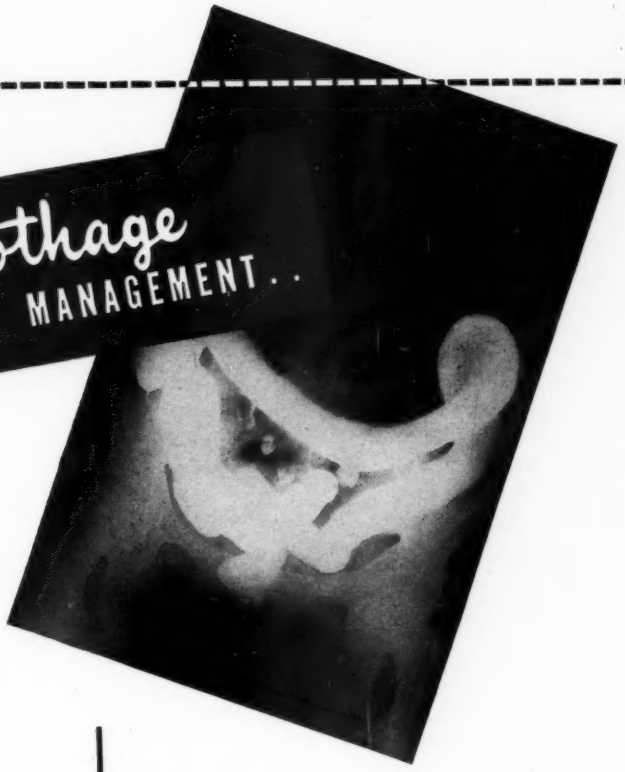

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RESEARCH IN THE SERVICE OF MEDICINE

✦ Reports and Announcements ✦

MEDICAL BROADCAST FOR OCTOBER

The following radio schedule of talks on medical and dental subjects by William O'Brien, M.D., Director of Postgraduate Medical Education, University of Minnesota, is sponsored by the Minnesota State Medical Association, the Minnesota State Dental Association, the Minnesota Hospital Association and the University of Minnesota School of the Air.

MEDICAL BROADCAST FOR OCTOBER

Oct. 3—11:00 A.M.	KUOM	Your Health is in Your Hands
Oct. 4— 5:15 P.M.	WCCO	Medical Care and Hospital Service
Oct. 6—11:30 A.M.	KUOM-KROC	Medicine in the News
Oct. 10—11:00 A.M.	KUOM	An Erect Body is a Well-Balanced Body
Oct. 11— 5:15 P.M.	WCCO	RH Factor
Oct. 13—11:30 A.M.	KUOM-KROC	Medicine in the News
Oct. 17—11:00 A.M.	KUOM	Your Feet Are Your Body's Foundation
Oct. 18— 5:15 P.M.	WCCO	Training the Very Slow Child
Oct. 20—11:30 A.M.	KUOM-KROC	Medicine in the News
Oct. 22— 4:45 P.M.	WCCO	Your Hospital in Peace Time
Oct. 24—11:00 A.M.	KUOM	Skin Is Nature's Covering for the Body
Oct.25— 5:15 P.M.	WCCO	Rampant Caries
Oct. 27—11:30 A.M.	KUOM-KROC	Medicine in the News
Oct. 31—11:00 A.M.	KUOM	Clean Hair Is Healthy Hair

INTERNATIONAL COLLEGE OF SURGEONS

The International College of Surgeons will hold its Tenth Annual Convention and Convocation on December 7 and 8, 1945, at the Mayflower Hotel, Washington, D. C. At this time approximately 200 men will receive their Fellowships. A scientific program is planned for both days. Convocation exercises will be held Friday evening, December 7, in the Mayflower Auditorium.

POSTGRADUATE COURSE IN ALLERGY

The American College of Allergists offers an intensive, practical course in allergy for five and one-half days, November 5 to 10, inclusive, at Thorne Hall, Northwestern University, Superior and Lakeshore Drive, Chicago, Illinois. Men in the service will be admitted free of charge, and for others the registration fee is $100.

Inquiries should be addressed to the Secretary of the American College of Allergists, 401 La Salle Medical Building, Minneapolis 2, Minnesota.

OMAHA MIDWEST CLINICAL SOCIETY

The Omaha Mid-West Clinical Society will hold its thirteenth annual assembly in Omaha, October 22 to 26, inclusive. Headquarters will be at Hotel Paxton.

A full five-day program again this year, which will include addresses, clinics and round table discussions by distinguished guests, and symposia and lectures by members of the Society. There will be a daily motion picture program and scientific and technical exhibits.

Following is a partial list of distinguished guests:

Elmer Belt, Los Angeles, California (Urologist); Sylvester N. Berens, Seattle, Washington (Neurosurgeon); Guy A. Caldwell, New Orleans, La. (Orthopedic Surgeon); Archibald D. Campbell, Montreal, Canada (Gynecologist-Obstetrician); Burrill B. Crohn, New York City (Internist, Gastro-enterology); Charles A. Doan, Columbus, Ohio (Internist, Research); Lester R. Dragstedt, Chicago, Illinois (Surgeon, Physiology); Robert H. Felix, Washington, D. C. (Psychiatrist); Mr. J. Ketchum, Detroit (Exec. Sec., Michigan Medical Service); Edward J. McCormick, Toledo, Ohio (Chairman, Council on Medical Service and Public Relations, American Medical Association); Alan R. Moritz, Boston, Massachusetts (Pathologist, Legal Med.); John A. Toomey, Cleveland, Ohio (Pediatrician-Contagious Dis.); Henry P. Wagener, Rochester, Minnesota (Ophthalmologist).

Titles of the symposia to be presented on Tuesday and Thursday are as follows: The Arthritides; Bleeding from the Alimentary Tract; Fractures; Head Injuries; Penicillin; Technic for Lessening the Morbidity and Mortality in Obstetrics. Friday, October 26, will be given over to a panel on Military Medicine presented by personnel of the United States Army Medical Corps.

All Medical Officers of the United States Army, Navy and Public Health Service will be admitted without payment of the usual five dollar registration fee.

Additional information may be obtained from the Secretary-Director, Dr. Roy W. Fouts, 1031 Medical Arts Building, Omaha 2, Nebraska.

NORTHERN MINNESOTA MEDICAL ASSOCIATION TO OBSERVE TWENTY-FIFTH ANNIVERSARY

With the ban on meetings lifted, an interesting all-day conference will be staged November 3 by the Northern Minnesota Medical Association at Fergus Falls where the Society was organized twenty-five years ago. An interesting symposium is being planned for the morning session to be followed by a luncheon, an afternoon session and a banquet in the evening. Several prominent speakers, to be announced later, have been invited to speak.

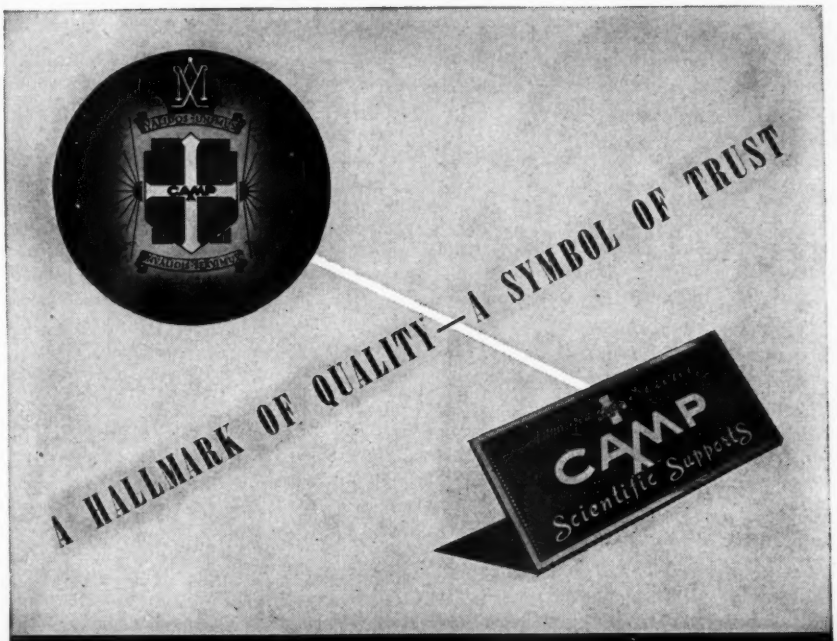
An open invitation is extended to all physicians who would like to attend.

WASHINGTON COUNTY

The Washington County Medical Society held its regular monthly meeting September 11, 1945, at Stillwater.

A report of the meeting of the House of Delegates

(Continued on Page 869)



For many, many years it has been our privilege to work closely with physicians and surgeons in the design, improvement and manufacture of scientific supports to meet the physiological, surgical and maternity needs of their patients. Evolved by the late Mr. S. H. Camp, the basic system of *patented adjustment principles*, incorporated in models graded to various types of *body build*, provides the endless number of combinations made necessary for precise fitting by the endless variations in the human figure. This has met the test of 40 years of practice. Accepted by the medical profession from the first, Camp Supports are today recognized as *standard* throughout the United States and many foreign countries. In this challenging new era we once again pledge to keep faith with the profession: FIRST, by maintaining consistent research; SECOND, by manufacturing scientific supports of the finest quality in full variety at *prices based on intrinsic value;* THIRD, to assure precise filling of prescriptions through the regular education and training of Camp fitters; and FOURTH, to adhere to the policy of ethical distribution. We trust that these standards will continue to be your hallmark of quality and your symbol of confidence wherever scientific supports are indicated.

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In Memoriam

DEMETER KALINOFF

Dr. Demeter Kalinoff of Stillwater, Minnesota, died in Miller Hospital, Saint Paul, on September 15, 1945, at the age of seventy-five years. He had been in failing health for the past three years.

A native of Bulgaria, he was born on December 15, 1870. Dr. Kalinoff obtained his early education in his native land and during 1885-6 was a soldier in the Bulgarian army, the country being at that time at war with Serbia. In 1889, when a young man of nineteen, his adventurous spirit prompted him to seek the opportunities of the new world and he remained for a year in the East, living near Fredonia, New York. In 1891 he became a student in the high school at Ann Arbor, Michigan, and was graduated with the class of 1894. In the fall of the latter year he entered the University of Michigan, which he attended for seven years, winning the degree of B.S. in 1899 and that of M.D. in 1901. He spent a few months as a nurse in the Presbyterian Hospital of Chicago and for a short period was connected with a sanitarium at Lake Geneva, Wisconsin.

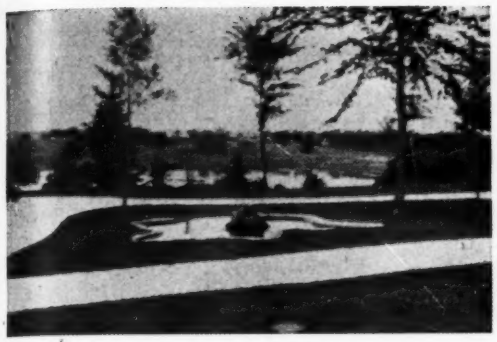
In the spring of 1902 he opened an office in Stillwater, and his practice gradually grew with the years. Along with his private practice, he was attending physician at the Minnesota State Prison from 1903 to 1935. In 1911 he went abroad for postgraduate work, spending six months in Vienna, Austria. Before returning to the United States, he visited his relatives whom he has seen but once since leaving home.

On June 7, 1911, Dr. Kalinoff was united in marriage to Miss Alice Pennington, one of Stillwater's native daughters, and they became the parents of four children, Dr. Frederick, Naidena R., Helen (Mrs. John Davis) and Vacil D.

Dr. Kalinoff was a member of the Elks Lodge No. 179, St. John's Lodge No. 1 A. F. & A. M., also a member of the Bayard Commandery, No. 11, the Washington Chapter 17 and the Osman Temple Shrine of Saint Paul. He was a member of the Washington County Medical Society, Minnesota State Medical Association and American Medical Association. In 1938 he was elected to the Stillwater Hall of Fame because of his outstanding service to his community

Few men in the medical profession or in any walk of life gained the respect, admiration and love of their patients or fellow citizens that Dr. Kalinoff enjoyed. His life was truly one of living for his patients, and no sacrifice was too great for him as long as it was to benefit the sick and distressed, his only hobby being the earnest wholehearted practice of medicine. The community and medical profession will long miss the friendliness, professional knowledge and skill of such a fine man and physician. No one, except those in close association with him, can fully appreciate the lovable character and kindliness that was in him.

F. M. McCarten.



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MAIN 2494

Of General Interest

Captain and Mrs. Russell Carlson and daughter recently returned to Stillwater where Mrs. Carlson and daughter will remain while Dr. Carlson is in service.

* * *

Dr. Richard C. Horns has become associated with Dr. Erling W. Hanson in the practice of Ophthalmology, with offices at 527 Medical Arts Building, Minneapolis.

* * *

Dr. C. M. Kelsey has closed his downtown office and is continuing his practice from his office at 1583 No. Hamline Ave., St. Paul 2, Minn.

* * *

Dr. E. R. Samson recently made a brief visit to Stillwater before departing for Rice Lake, Wisconsin, where he was married. Dr. and Mrs. Samson are now at home in Stillwater.

* * *

Dr. Frank Brigham, Watkins physician and surgeon, has been in Northwestern Hospital, Minneapolis, for treatment. Dr. Brigham is a brother of Dr. Charles F. Brigham, of St. Cloud.

* * *

Dr. DeWitt W. Englund has terminated his association with the Davis Clinic at Wadena and accepted a fellowship in internal medicine at the Mayo Foundation.

* * *

Because of the demands of other professional work, Dr. Irving H. Kiesling, Coleraine, has resigned from the Lake Julia Sanatorium Commission and the Welfare Board, offices he has filled since 1926.

* * *

Dr. Charles L. Sherman has sold his hospital, building and equipment, in Luverne to the city, which will operate it hereafter. Closed since July 15, the hospital reopened for service on August 1.

* * *

Dr. Henry Silver has closed his offices in Sebeka and moved with his family to Culver City, a suburb of Los Angeles. Dr. Silver will be associated with another physician with offices in Los Angeles.

* * *

Dr. Robert Swanson, who has been associated with Dr. Frank G. Folken at Albert Lea, has opened offices of his own in the Hyde Building. Dr. Swanson will specialize in diseases of eye, ear, nose and throat.

* * *

Dr. Miles J. O. Gullingsrud, recently discharged from the Army Medical Corps, has become associated with Dr. J. J. Swendson in the practice of gynecology and obstetrics, with offices at 1240 Lowry Medical Arts Building, Saint Paul.

* * *

James Hagen, son of Dr. O. J. Hagen of Moorhead, was killed in a liberator flight over Lynz, Austria, July 25, 1944. He had been reported missing following the flight but recently was declared dead by the War Department.

* * *

Remodeling of the building purchased for hospital purposes by Dr. Ralph B. Johnson, Lanesboro, has been completed, and the hospital is now in operation. It has a nine-bed capacity, and the staff includes three registered nurses.

* * *

Dr. George F. Schmidt, Minneapolis, recently honorably discharged from military duty, has returned home and is again in practice. Dr. Schmidt has been serving as medical officer at the Officer's Candidate School at Fort Benning, Georgia.

* * *

Captain Charles E. Stafford, Baudette, who has been in service in Australia for the past two years, has been honorably discharged, and will return to his practice in Baudette following the completion of a short "refresher" course at the University of Minnesota.

* * *

Dr. H. J. Brekke, a former member of the Washington County Medical Society, recently visited Stillwater while on leave. He has seen service in England, France, Holland and Germany. He has gone to the Medical Officers' Post at Hot Springs, Arkansas, for reassignment.

* * *

Lederle Laboratories, Inc., a unit of American Cyanamid Company, has renewed for another year its professional service radio program "THE DOCTORS TALK IT OVER" which is heard weekly coast-to-coast over the American Broadcasting Company network on Tuesday nights.

* * *

Stricken with a sudden heart attack on July 22, Dr. Abel R. Ellingson, Detroit Lakes, was taken in an ambulance to St. Barnabas Hospital, Minneapolis, for specialized treatment. At this time Dr. Ellingson is reported as improving, but his condition is still considered serious.

* * *

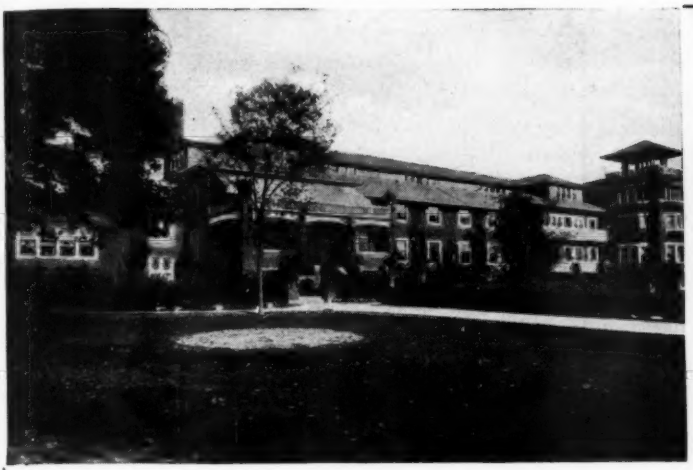
Dr. Hovald K. Helseth, formerly associated with the Bratrud Clinic at Thief River Falls and a member of the staff of St. Luke's Hospital there for the past eight years, has gone to Chicago for postgraduate study. On completion of his work, Dr. Helseth will engage in private practice at Fergus Falls.

* * *

While returning from Rochester, where he had driven a patient, Dr. H. J. Just, Hastings, suffered leg and chest injuries in a head-on collision near Zumbrota. Both cars were completely demolished.

Before opening his offices in Hastings, Dr. Just had been in practice at Lafayette.

(Continued on Page 860)



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Theocalcin (theobromine-calcium salicylate), Trade Mark, Bilhuber.

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department of rheumatic diseases at the Mayo Clinic when he entered military service in 1942. He is now chief of medical service and director of the rheumatism center at the Army and Navy Hospital at Hot Springs, Arkansas.

Colonel Hench, an international authority in his field, was awarded the Heberden Medal in London in 1942, in recognition of his outstanding research in rheumatic diseases. No other American has ever received this coveted award.

* * *

After twenty-eight years of practice in Moorhead, Dr. Bottolf T. Bottolfson, has announced his retirement. A graduate of the University of Minnesota School of Medicine, Dr. Bottolfson studied in London, Berne, and Vienna during 1926, 1929, and 1932, specializing in eye, ear, nose, throat and bronchoscopy. In 1937 he was in India, and performed a number of eye operations. During World War I he served as a lieutenant in the Medical Corps. Although his practice has always been heavy, he has been health officer and, later, mayor of Moorhead.

Dr. and Mrs. Bottolfson will continue to make their home in Moorhead.

* * *

The Japs wantonly destroyed the medical libraries of the University of the Philippines College of Medicine and Surgery and of Santo Tomas College of Medicine and Surgery in Manila. The Academy-International of Medicine is, therefore, asking the members of the medical profession of the United States and Canada to donate books and periodicals to build up these medical libraries. To avoid too great a duplication, physicians and medical libraries are requested to submit lists of books and periodicals they are willing to give to the Academy-International of Medicine, Suite 101, Liberty Building, Topeka, Kansas. They will then be notified what items are desired and where and how to ship them.

* * *

November 8, 1945, will be the fiftieth anniversary of the discovery of x-ray by the German physicist, Wilhelm Conrad Roentgen. As is well known, the discovery of the new rays was accidental and their nature not known —hence, the term x-ray. The medical profession was quick to adopt the use of the x-ray, although its use was limited to the diagnosis of bone changes during the first fifteen years following its discovery. Since then, development of technique has made the x-ray of inestimable value in the investigation of almost every part of the human body. Its value as a therapeutic agent has also been recognized. Roentgenology has become an important medical specialty. The fiftieth anniversary of the discovery by Roentgen merits commemoration.

* * *

The American people contributed over sixteen and a half millions of dollars to the National Foundation for Infantile Paralysis in 1945 as compared with about

(Continued on Page 864)

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GYNECOLOGY—Two-Week Intensive Course, October 22.

OBSTETRICS—Two-Week Intensive Course, October 8.

ANESTHESIA—Two-Week Course in Regional, Intravenous and Caudal Anesthesia.

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$200,000.00 deposited with State of Nebraska for protection of our members.

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eleven million in 1944. Fifty per cent is allocated each year to the national headquarters of the National Foundation to finance research into the cure and prevention of infantile paralysis and a broad educational program which includes scholarships in orthopedic nursing, physical therapy, orthopedic surgery, neurology, and health education. Half of the sum is retained by County Chapters of the National Foundation to carry on services to victims of the disease. It has been announced that up to August 11, 1945, some 3,558 cases have been reported this year as compared with 5,008 for the same period last year.

* * *

Dr. Truman A. Hedemark, formerly of Milbank, South Dakota, is now affiliated with the Bratrud Clinic at Thief River Falls. Dr. Hedemark is a brother of Dr. Homer H. Hedemark, who has been a member of the Clinic for some time.

Before going to Milbank, Dr. Hedemark had been assistant city and county physician in Saint Paul. He is a graduate of Hamline University, and he took his medical degree at St. Louis University. His internship was served at St. Mary's Hospital in East St. Louis, and Ancker Hospital in Saint Paul. He has done postgraduate work in Minneapolis, Rochester, Chicago and St. Louis.

Dr. Hedemark is a veteran of Naval Air Service, World War I, and is prominent in the American Legion. He has been president of the Whetstone Valley District Medical Society for three terms.

Dr. Harry Lee Parker has returned to the Mayo Clinic as an associate in neurology after an absence of eleven years. Dr. Parker first came to the Clinic as a fellow in 1919. In 1925 he was made an associate in neurology and he filled the position until 1934, when he resigned to practice in Dublin, Ireland. During his residence there, Dr. Parker was honorary professor of neurology at Trinity College, staff physician at Richmond, Whitworth, and Harwicke Hospitals, and Stewart Hospital, and consulting neurologist at the Meath, Mercers, and Orthopedic Hospitals.

He is a fellow of the Royal College of Physicians of Ireland, also the Royal Society of Medicine of England, and he is a member of the British Medical Association, the Association of British Neurologists, the Royal Academy of Medicine in Ireland, the American Neurologists, the Royal Academy of Medicine in Ireland, the American Neurological Association, and he is an honorary member of the Central Neuro-Psychiatric Society.

* * *

Major William Heck is home on leave in Saint Paul after serving eleven months overseas.

Commander Warner Ogden was home on leave in Saint Paul this summer after serving fifteen months overseas; he is now stationed at Corvallis, Oregon.

Lieutenant Commander B. E. O'Reilley of Saint Paul has been assigned Chief Medical Officer on Admiral Turner's Flagship, Rocky Mountain.

Major Wallace P. Ritchie was the first doctor in the

(Continued on Page 866)

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● A non-stilbene compound developed in the Research Laboratories of Schieffelin & Co., BENZESTROL enables the patient to make the climacteric transition smoothly, without the requirement of indefinite treatment.
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In addition to its use in the control of the menopause, Schieffelin BENZESTROL has been successfully used in all conditions in which estrogen therapy is indicated, and is available for oral, parenteral and local administration.
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Literature and Sample on Request

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VITAMIN D INCREASED
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United States to be discharged on the point system; he was overseas for thirty-three months. Dr. Ritchie opened his office in the Lowry Building, Saint Paul, on September 15.

Lieutenant W. G. Johanson, USNR, is now stationed at Athens, Georgia, after serving twenty months overseas.

Captain E. V. Kenefick, Saint Paul, has been transferred to the Regional Hospital, SAAAB, Santa Ana, California.

Lieutenant I. M. Karon, USNR, is now stationed at the U. S. Naval Depot, Yorktown, Virginia, after having served twenty-seven months of destroyer duty.

Captain Martin E. Janssen of Saint Paul received the Bronze Star Medal for meritorious service in Burma.

Lieutenant Sam Herman, USNR, has received a medical discharge and has opened his office in the Lowry Building.

Major John Earl is home on leave in Saint Paul after having served thirty-two months overseas.

Colonel Joseph F. Borg of Saint Paul is home on leave; he has received the Bronze Star Medal.

Major Jerome Hilger has received his discharge from service and has resumed practice at 444 Lowry Medical Arts Building, Saint Paul. He has served thirty-three months overseas.

Commander S. W. Shimonek of Saint Paul at present is stationed at the U. S. Naval Hospital, Mare Island, California.

HOSPITAL NEWS

The Board of Directors of St. Luke's Hospital, Fargo, North Dakota, has announced the appointment of Martin Langhaug as superintendent. Mr. Langhaug is a former resident of Hinckley, where he was superintendent of schools.

* * *

The committee appointed by the Iowa Legislature to make a survey of mental institutions in Iowa and other states has reported recovery of patients at the Rochester State Hospital as particularly outstanding. Dr. Samuel W. Hamilton, of the United States Public Health Division, Washington, D. C., assisted the committee, which included Dr. John R. Gardner, of Lisbon, Senators Herman Knudson, of Mason City, and Alden L. Doud, of Douds, and Representative John S. Hefner, of Webster City.

Dr. Magnus C. Peterson, superintendent of the Rochester Hospital, was host to the group and placed all the institution's statistics at their disposal.

A fund of $9,000,000, established by the Iowa Legislature for improvement of state hospitals, will be allocated according to recommendations of the committee based on their study of similar institutions in other states.

* * *

St. Ansgar's Community Hospital Association, Moorhead, inaugurated a campaign on October 1 to raise $400,000 for a new 100-bed hospital to be operated by the Franciscan Sisters, who have been in charge of the

REST HOSPITAL

A quiet, ethical hospital with therapeutic facilities for the diagnosis, care and treatment of Nervous and Medical cases. Invites coöperation of all reputable physicians who may supervise the treatment of their patients.

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Children are grouped according to type and have their own separate departments. Separate buildings for girls and boys.

Large beautiful grounds. Five school rooms. Teachers are all college trained and have Teachers' Certificates.

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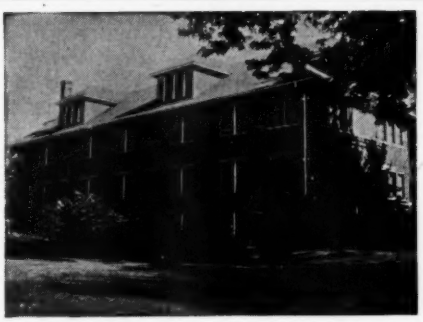

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present hospital. According to present plans, the old structure will be converted into an old folks' home.

* * *

Miss Myrtle Skoog, superintendent of Immanuel Hospital at Mankato, has resigned to become assistant superintendent of a 480-bed government hospital in Honolulu, T. H. Miss Skoog is a graduate of the nursing school, Swedish Hospital, Minneapolis. She came to Immanuel Hospital as instructress of nurses in 1925, and in 1930 was made superintendent of the hospital. Under her administration the hospital became accredited by the American College of Surgeons.

* * *

A $30,000 addition to the Children's Hospital, Saint Paul, which will increase capacity by 30 per cent was begun during the last week of August. A fourth floor will be added with glass-enclosed wards, which will accommodate twenty additional patients. At the present time only sixty-five patients can be housed.

Dr. Walter Ramsey, secretary of the Board of Trustees of the hospital, says that the addition will be completed by December.

* * *

Classes in training of practical nurses are being conducted at Franklin Hospital, in an effort to relieve the critical shortage of nurses. The first class consisting of twenty-three members, graduated last May. The course is completed in nine months and classes begin at four-month intervals throughout the year. September 6 was the most recent enrollment date.

Franklin Hospital is intended primarily for the care of convalescent and chronic patients.

Minnesota Hospital Survey

A survey of Minnesota hospitals "as-they-are" is being directed by Governor Thye's Minnesota Hospital Study Committee. Ray Amberg, Superintendent of the University Hospitals, has been named chairman of the committee.

This survey which will include all institutions offering bed care for the sick, is part of a broad program of hospital studies being made by the various states and co-ordinated and assisted by the Commission on Hospital Care.

The national Commission on Hospital Care was established by the American Hospital Association. It now functions as an independent agency gathering facts about the extent and adequacy of hospital service. The chairman of the national Commission is Thomas S. Gates, Chairman of the University of Pennsylvania. The work of the Commission is financed by the W. K. Kellogg Foundation, The Commonwealth Fund, and The National Foundation for Infantile Paralysis.

At the stimulation of the Commission's technical staff, headed by A. C. Bachmeyer, forty-two states and the District of Columbia have now taken some action toward making surveys.

The members of the Minnesota Committee represent various health-interested groups in the state. The hospital association, medical association, dental association, nursing association, pharmaceutical association, division of public institutions and the state board of health are all represented.

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Dr. R. O. Sather, recently discharged from military service, has resumed his duties at the Northwestern Clinic in Crookston. A lieutenant colonel in the Army Medical Corps, Dr. Sather was stationed in the Southwest Pacific for over three years.

* * *

Dr. and Mrs. S. L. Myre, of Greybull, Wyoming, have announced the engagement of their daughter, Carol Marie, to Dr. Benjamin F. Fuller, of Saint Paul. Dr. Fuller, who is now serving his interneship at the University Hospital, is the son of the late Dr. Benjamin Fuller, Saint Paul. Miss Myre is a senior at the University of Minnesota.

* * *

Dr. W. B. Richards, St. Cloud, was guest speaker at a recent luncheon meeting of the local Lions Club. Dr. Richards discussed the "wonder drugs"—Sulfas, Penicillin, Thyrothrysin and Thiouracil—and latest methods of immunization.

* * *

Drs. D. H. Garlock, E. W. Johnson, Percy Watson, of Bemidji, and Dr. Mary Ghostley, of Lake Julia Sanatorium, attended the meeting of the Upper Mississippi Medical Society held at Ah-Gwah-Ching on September 15.

* * *

Through courtesy of the board of directors of Sand Beach Sanatorium, Dr. R. R. Hendrickson, director of the sanatorium, will assist Dr. C. W. Moberg in his Lake Park offices on week days from 1 until 3 p.m. as long as the present medical emergency lasts. Dr. Hendrickson only recently returned to his post at the sanatorium from service in the Army's Public Health Division.

* * *

Dr. L. A. Laikola, superintendent of the Soudan Hospital for the past two years, has resigned to engage in private practice. Dr. Gordon Martin, formerly of Coleraine, who has been in California, has been appointed Dr. Laikola's successor.

* * *

Two Minnesota physicians, Captain Herschel Kaufman, of Minneapolis, and Captain Albert E. Krieser, of Mankato, were among the twenty-four army doctors who arrived at La Guardia Field from the European theater on September 24. All were scheduled for discharge in the near future.

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BOOK REVIEWS

Books listed here become the property of the Ramsey, Hennepin and St. Louis County Medical Libraries when reviewed. Members, however, are urged to write reviews of any or every recent book which may be of interest to physicians.

PEDIATRIC X-RAY DIAGNOSIS. A Textbook for Students and Practitioners of Pediatrics, Surgery and Radiology. John Caffey, A.B., M.D. Associate Professor of Pediatrics, College of Physicians and Surgeons, Columbia University; Associate Pediatrician and Roentgenologist, Babies Hospital and Vanderbilt Clinic, New York City; Consulting Pediatrician, Grasslands Hospital, Westchester County, N. Y., and St. John's Hospital, Yonkers, N. Y. 838 pages. Illus. Price, $12.50, cloth. Chicago: Year Book Publishers, 1945.

PLASTER OF PARIS TECHNIQUE. In the Treatment of Fractures and Other Injuries. T. B. Quigley, Lt. Col., Medical Corps, Army of the United States; Instructor in Surgery, Harvard Medical School (in absentia); Junior Associate in Surgery, Peter Bent Brigham Hospital, Boston (in absentia). 107 pages. Illus. Price, $3.50, cloth. New York: The Macmillan Co., 1945.

ESSENTIALS OF CLINICAL ALLERGY. Samuel J. Taub, M.D., Professor of Medicine, Cook County Graduate School of Medicine; Attending Physician in Medicine, Cook County Hospital; Fellow of American Academy of Allergy; Formerly Assistant Professor of Medicine, Rush Medical College of University of Chicago. 198 pages. Price, $3.00, cloth. Baltimore: Williams & Wilkins Co., 1945.

THE OSSEOUS SYSTEM. A Handbook of Roentgen Diagnosis. Vincent W. Archer, M.D., Professor of Roentgenology, University of Virginia, Department of Medicine. 320 pages. Illus. Price, $5.50, cloth. Chicago: Year Book Publishers, 1945.

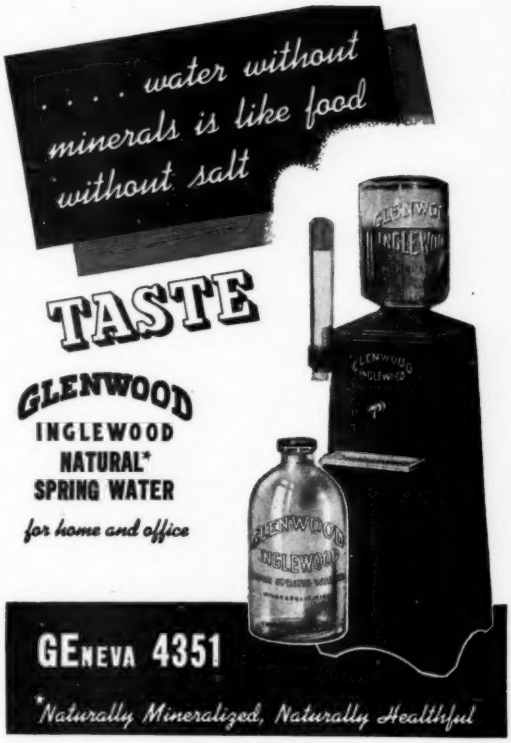
WHAT PEOPLE ARE. A Study of Normal Young Men. Clark W. Heath, in collaboration with Lucien Brouha, Lewise W. Gregory, Clark C. Seltzer, Frederic L. Wells and William L. Woods. The Grand Study, Department of Hygiene, Harvard University. 141 pages. Illus. Price $2.00, cloth. Cambridge, Mass.: Harvard University Press, 1945.

WASHINGTON COUNTY

(Continued from Page 854)

of the Minnesota State Medical Association was presented among other matters of interest. Dr. Walter P. Gardner of Saint Paul entertained the members for about an hour with a lecture on "The Relation of Psychiatry to General Practice," a difficult subject comprehensively presented.

E. SYDNEY BOLEYN, Secretar



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CLINICAL-PATHOLOGICAL CONFERENCE

(Continued from Page 822)

DR. HERMAN WOLFF: The particular thing that I thought of was the relation of one type of anemia which has been sort of a dumping ground in recent years with this type of case that has been outlined. I would like to know whether in their opinion this condition which has been called achrestic anemia is perhaps at the end stage of atrophy of the bone marrow which they have been seeing. For a long time, we have seen pernicious anemia patients who fail to respond to liver therapy, being classified under the term of achrestic anemia. This is a macrocytic anemia that is usually diagnosed as pernicious anemia, that we have discussed tonight. Dr. Ikeda and I had one such case not so long ago, and we were fortunate in getting an autopsy. At autopsy, the bone marrow was markedly hyperplastic such as we have been taught to expect in the usual case of pernicious anemia. This patient failed to respond to liver therapy, and the terminal affair was that of bronchopneumonia.

DR. SOMMERS: I just want to mention one other form of treatment. That is the use of blood transfusions. We believe that transfusions in pernicious anemia in relapse are contra-indicated because they slow up the process of readjustment of hematopoiesis toward normal. I have a patient now who has a severe relapse with about 900,000 red cells and complicated by lobar pneumonia. That case will need several small transfusions. Some time ago at the Minneapolis General Hospital, a patient came in with severe heart failure secondary to the anoxemia of a severe relapse of pernicious anemia, and we used packed red blood cells, a trick that I think we should all remember, particularly in the hospital where we have a blood bank as in this one. Transfusion of red cells is quite simple to do. The blood is drawn the day before and permitted to stand in the refrigerator over night. Under sterile technique, most of the plasma on top is pipetted off. We found relatively little danger of clotting in the tube as you might expect with such a rather concentrated red blood cell solution. Thus, we give what the patient needs and do not add to the heart failure by the administration of plasma which would overburden the circulation. On the whole, however, we do not give transfusions in pernicious anemia.

With reference to the so-called "achrestic anemia," we are of the opinion that sufficient data are not available to accept it as a clinical entity. The macrocytic anemia of liver disease has been and still is confused with pernicious anemia by the casual observer. There is the possibility that cirrhosis of the liver and pernicious anemia may occur in the same individual, and obviously the degree of liver pathology will determine the response to therapeutic measures. And again, the bone marrow may not utilize the liver principle. Because of an atrophic state, of the presence of another pathologic process or of some other unknown complications, the synchronization between the liver and the bone marrow is permanently broken. A refractory behavior of the patient to specific therapy is the ultimate sequela.

THE LATEST BIRTH FIGURES

As the statisticians predicted, the birth rate fell in 1944 below the peak year of 1943. The Census Bureau in Washington recently announced that there were nearly 2,800,000 registered births in the United States last year, compared with the nearly 3,000,000 of the previous year. The provisional birth rate for 1944 was 20.2 per 1,000 population falling 6 per cent from 21.5 in 1943. The number of births is divided as follows: 2,454,700 White or 87 per cent of the total, 324,183 Negro or 11.6 per cent. 15,917 or 0.6 per cent were of other races, including 10,541 Indians, 2,889 Japanese and 1,291 Chinese. —*Briefs*, October, 1945.

Classified Advertising

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DOCTOR WANTED—Very good territory; large clientele. Present doctor leaving on account of health; only one in this community. Write Sebeka Commercial Club, Sebeka, Minnesota.

WANTED—X-ray and labtoratory technician in small clinic in a Minnesota city of 10,000. Salary open. Address D-130, care of MINNESOTA MEDICINE.

ASSOCIATE WANTED—By general practitioner in county seat town of 2,800, central Minnesota. New hospital under construction. Prefer discharged serviceman and someone with special training in E. N. T. or O. B. work, but anyone considered. Permanent association, if satisfactory. Liberal salary to start. Address D-131, care MINNESOTA MEDICINE.

PHYSICIAN'S OFFICE FOR RENT—Excellent location for general practitioner in a new modern building at 620 Fourth Street, White Bear Lake, Minnesota. Large reception room is shared with dentist who has very good practice. Telephone Emerson 5363, Saint Paul, Minnesota.

PRICED FOR QUICK SALE—late model Picker Waite 30 ma shockproof x-ray unit, tilt Bucky table. Excellent condition. Address D-132, care MINNESOTA MEDICINE.

WANTED: Physician for general practice. Must be able to do tonsillectomies and general emergency surgery. Can step into well-equipped office. No real estate or other investment except office equipment later if desired. Partnership. Modern hospital. Write D-133, c/o MINNESOTA MEDICINE.

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PHYSICIAN-SURGEON WANTED—To locate at New Richland, Minnesota. Excellent tributary territory; two hospitals accessible. Office rooms available. Address D-135, care MINNESOTA MEDICINE.